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UNITED STATES DEPARTMENT OF AGRICULTURE

DEPARTMENT BULLETIN No. 1246

Washington, D. C. August 13, 1924

MARKET CLASSES AND GRADES OF DRESSED BEEF

By

W. C. DAVIS, Investigator in Marketing Livestock and Meats; and
C. V. WHALIN, Specialist in Marketing Livestock and Meats
Bureau of Agricultural Economics

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By W. C. Davis, *Investigator in Marketing Livestock and Meats, and* C. V. Whalin, *Specialist in Marketing Livestock and Meats, Bureau of Agricultural Economics.*

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DEFINITION OF CLASSIFYING AND GRADING.

Classifying and grading a commodity consist merely in dividing it into lots or groups which have similar and uniform characteristics, and which show minimum variations in the essential factors which distinguish the group from other groups. It is an analytical process, going from the general to the particular, a grouping of individual units in such a way that they present the greatest uniformity possible.

Classifying and grading are complementary terms. Both are a part of the same general process, but classification precedes grading. For example, all beef is first divided into a number of large units, such as steer beef, cow beef, bull beef, etc. These general units are called classes. That done, each class is still further subdivided into smaller and more specific groups, such as prime steer beef, good steer beef, medium steer beef, etc. These smaller units are called grades.

[1] Acknowledgment is made of valuable assistance rendered by C. E. Gibbons, Assistant in Marketing Livestock and Meats, in the preparation of this bulletin.

PURPOSE OF CLASSIFYING AND GRADING.

The main purpose of classifying and grading beef, as is true of any other commodity, is to make possible a determination of values. When a large quantity, made up of many units varying widely in several important respects is considered, it is impossible to measure accurately the excellence or deficiency of the lot as a whole; consequently it is impossible to determine its true value.

For example, beef carcasses vary so much in quality, weight, and many other respects that one carcass may be worth $100 and another $20. A certain portion of beef may be worth 40 cents a pound and another 15 cents a pound. It is apparent, therefore, that to determine the value of a lot of beef it is necessary to group the units making up the lot in such a way that in a given group the variations between the units are so slight that they are negligible. That done, the degree of excellence or deficiency can readily be determined, and it is on this that market values depend.

Having determined the market value, it still remains to provide machinery for conveying the idea or concept of values to another; in other words, for quoting prices. To accomplish this, certain labels or names must be formulated with which to designate degrees of excellence or deficiency, and a standard of values agreed upon.

It is impossible, for example, to quote a price on "beef" because such a quotation would convey practically no information. A price quoted on "good grade steer beef," however, is intelligible and informative, provided both parties understand what is meant by "good grade" and "steer." When such a condition exists, classifying and grading have been accomplished.

PURPOSE OF STANDARD CLASSES AND GRADES.

There are times during the progress of almost any commodity from producer to consumer when it is either inconvenient or impossible for the buyer to inspect either personally or through an agent, the commodities he wishes to buy. Therefore, in order that persons may trade with one another in a given commodity, it is necessary first to draw up a code of rules for classifying and grading the commodity according to a certain standard and second to formulate a set of terms the meaning of which is definitely fixed and generally understood. It is essential that both the buyer and seller use the same terms to describe a given article and that both attach the same meaning to the terms used. When this usage becomes widespread and permanent we have a standard classification or system of grading which facilitates purchasing, lessens the volume of waste products to be handled by the middleman, and therefore improves the market for the producer.

If, for example, a retailer in New York City could buy beef in Chicago by merely specifying the class and grade desired, and could have reasonable assurance that he would obtain precisely what he wants, this would go a long way toward simplifying the present rather elaborate scheme of distribution. Economies would be effected, and the cost of distribution could be materially reduced.

So far as is known, no serious attempt to collect, organize, define, interpret and harmonize the various trade names and terms used in

the United States to describe market classes and grades of livestock and dressed meats had been made until early in the present century. The task was undertaken by the Agricultural Experiment Station of the University of Illinois, under the leadership of Prof. Herbert W. Mumford, assisted by Prof. Louis D. Hall and others. Thorough investigations were conducted both at the experiment station and on the Chicago market, and these investigations were reported in a series of bulletins.

When the Bureau of Markets, now the Bureau of Agricultural Economics, inaugurated its market reporting service on livestock and dressed meats in 1917, these publications of the University of Illinois were used as a basis for formulating a standard classification of market classes and grades for use in reporting prices and trade conditions. Using this classification as a basis, the bureau has elaborated a complete classification of livestock and dressed meats, and this complete classification will be described in a series of bulletins of which this is the first.

For many years, some business in dressed beef has been done on the basis of specifications, but in most instances such transactions have been based largely on class, the grade being indicated in only the most general terms. For that reason this plan has not, as a rule, been successful, and the great bulk of beef is still personally inspected before purchase.

That at least some progress along the line of buying meat on specifications is possible is indicated by the fact that in 1923 the Emergency Fleet Corporation purchased hundreds of thousands of pounds of meat weekly for use on Shipping Board vessels—wholly on specifications. Although all meat was inspected for grade by a Government inspector before it was finally accepted, the fact that for days at a time the inspector made no rejections, and that, on the whole, probably 99 per cent of the meat offered was accepted, demonstrates rather conclusively that it is entirely possible, under a standard system of classifying and grading, for the purchaser to make his specifications so clear and exact that the seller has little or no difficulty in understanding what is wanted.

CHIEF REQUISITIES OF STANDARD CLASSES AND GRADES OF BEEF.

What are the chief requisites for a standard system of classifying and grading beef, and what should be the basis of such a system?

First of all, the system should be logical and workable. It should fit the needs of the trade. Arbitrary action is sometimes necessary to uproot certain evils and inconsistencies which creep into every industry, but no system of grading could hope to succeed which ran counter to the fundamentals of trade practice. For example, there would be no point to calling a certain carcass of meat No. A 1 unless, under a fair interpretation of the term, that kind of a carcass be superior to all others handled by the trade.

Second, it should be specific. Whenever a carcass of meat is placed in a given class and grade it should be placed there for some definite reason which can be explained and demonstrated to anyone interested. Individual fancy or personal prejudice can have no place in a standard system of grading.

Third, it should have permanence. No system of grading which is unduly influenced by geography, temporary supply, demand, or other trade conditions, or by time, can ever become standard. The main weakness of most of the systems of grading used heretofore lay in their flexibility and instability. Location of the market, season of the year, temporary fluctuations, either in available supplies or trade preference, brought decided changes in the determination of grades. A carcass of beef which graded Good on one market was called Medium on another, and possibly Choice on a third. Furthermore, on the same market, at certain seasons of the year, when supplies of grass-fed beef were plentiful, the whole scale of grades was perceptibly lowered and carcasses were graded Good which would have been called Medium at another season when the bulk of the beef offered was derived from grain-fed animals.

Obviously, if the system is subject to such variations, one market has as much right as another to change it, and, carrying the logic of the situation a step further, every member of the trade is privileged to alter the scheme of grading to suit his own fancy or convenience of the moment. Such a situation, of course, defeats the whole purpose of standardization and leads to confusion and chaos in marketing.

Apparently, then, the only way to render a system of classifying and grading independent of such rapidly changing conditions is to base it on certain fundamental characteristics inherent in the commodity, defining these characteristics as clearly as possible, and setting limits for them as definite as circumstances will permit.

Virtually all systems of classifiying beef are comparatively simple. Classification usually is based on certain broad, general principles, which are easily defined and readily applied. The system of classifying used in this bulletin, based wholly on the sex condition of the animal which produced the beef, presents no difficulties of definition and few of application. Grading within the classes, however, is a different matter.

DIFFICULTIES IN EVOLVING STANDARD CLASSES AND GRADES FOR BEEF.[1]

Beef is a very difficult commodity to grade. Absolute exactness is impossible. This is due partly to the fact that each individual carcass differs somewhat from every other carcass; hence no given carcass can be taken as a sample exactly typical of a large number. Furthermore, meat is extremely perishable, which makes both quick handling and a minimum of handling highly essential.

[1] For purposes of this bulletin beef may be defined as flesh from mature animals of the bovine species. Veal, on the other hand, is a term used to designate the flesh of an immature bovine animal. So far as trade practice goes the two terms, beef and veal, are rather loosely used. The exact line of demarcation between them has not yet been sharply defined. One merges gradually and, to the ordinary observer, imperceptibly into the other and it is as difficult to define in a text of this kind when veal becomes beef in the commonly accepted sense as to determine exactly when a boy becomes a man. Heredity or breeding, character of feed, method of handling and general circumstances of environment are potent influences in determining the time and rapidity of the transformation. Because of the extreme variability of all of these factors neither age, weight, or size will serve as a reliable criterion. Certain changes, however, do occur in the flesh of the animal, and it is these changes which determine whether the commodity is beef or veal. Unfortunately, the transformation occurs so gradually that the line of demarcation between beef and veal must be a more or less arbitrary matter. This subject will be discussed in detail in a subsequent bulletin on veal.

CARCASS BEEF IN MODERN COOLER

Another difficulty lies in the fact that there are practically no mechanical devices to aid the grader. The only device of this kind which can be used readily is the scales, and the system of grading described herein disregards weight in determining both class and grade. Certain subclasses, it is true, are based on weight, but these are of relatively little consequence compared with the main series of classes and grades. The beef grader, therefore, must depend almost entirely on mere observation and a constant matching of the thing observed with a set of ideals or pictures which he carries in his mind.

The task of the authors, therefore, is to draw a set of word pictures which will enable the one interested in grading beef to form in his mind a picture typical of each market class and grade. This is not a simple matter, because all grading of meats is relative. Specifications involving mathematical measurements or mechanical apparatus can not be laid down. The grade into which a certain carcass shall be put depends upon the degree to which the carcass possesses certain factors or characteristics which are common to all units of the commodity, and these variations in degree are not yet subject to mathematical measurement.

VARIOUS BASES FOR GRADING BEEF.

Assuming the desirability of a standard system for grading beef, the question arises, What factors shall determine why a given carcass of beef should be placed in one class and one grade and not in some other class and grade?

It is apparent that several bases might be used for grading beef. For example, weight might be made the determining factor. As a matter of fact, certain agencies in the meat trade do lay considerable stress on the matter of weight. This, however, is but a form of classification and has nothing to do with grading.

Again, a system of grading might be based on the geographical origin of the animals which produced the beef. In times past considerable weight was attached to where the animal came from, and even to-day some of the old terms such as native, western, and Texas, which grew out of that system, still linger.

Conceivably, age might be made the basis for grading, and, as a matter of fact, age has much to do with indicating the grade of meat, though it has little to do with actually determining the grade.

All the systems of grading mentioned thus far break down in one or more respects when the three fundamental requisites of grading are applied to them. They all lack workability, definiteness, or permanence. It is believed, however, that the system of grading set forth in this bulletin meets all the requirements with a minimum of the objections found in the systems that have been used heretofore.

In the final analysis, market preference, over a long period of time, must be taken into account. Although market preference has been given consideration in the actual order of arrangement of the various grades, it has been disregarded in the determination of any particular grade. In other words, a given carcass of meat is placed in a certain grade because of inherent characteristics of that carcass and without any reference to the preference of the consumer. On the other hand, in the arrangement of the grades, No. A1, or Prime, is

placed first rather than last because it is the most desirable from the standpoint of the consumer.

Even this statement is subject to some qualification, for it is conceivable that, in a state of free distribution where price is eliminated as a factor, a majority of consumers might select Good grade beef in preference to Prime grade beef. Trade preferences shift from time to time. As an example of this, the present strong trend toward lighter weight carcasses may be noted. To-day a majority of consumers willingly pay a higher price for relatively inferior grades of meat in order to obtain the lightweight cuts which are better suited to present-day modes of living. Finally, therefore, it may be stated that, in the system described in this bulletin, the order of arrangement of the grades within the class is determined by the preference, over a long period of time, of the more discriminating consumers.

The system set forth in this bulletin is based on just three characteristics—quality, finish, and conformation. Each of these is inherent in the beef itself, and it is believed that the combination of the three provides the basis for a system of classifying and grading which is not only fundamental, but is comprehensive and adequate. Other factors might be named, but it is believed that the definitions of these three fundamental characteristics are sufficiently broad to allow the subordination of all other factors to them.

DEFINITION OF TERMS.

Any discussion of classes and grades of beef involves the use of numerous terms, the purpose of which is to describe the various factors and characteristics which determine and differentiate the various groups. Nearly everyone has a fair idea as to what he means by such terms as quality, finish, and conformation, but these ideas vary widely. These variations in definitions of terms have led to endless confusion in the past, and have precluded the establishment of a uniform or standard classification.

Hence, in the preparation of this bulletin, it has been deemed advisable to formulate at the outset definitions of a few of the terms which are used to designate the more important characteristics of beef. Variations of these characteristics are the basis of the classification hereinafter described. For the purposes of this system of classifying and grading, therefore, the following definitions are understood.

CONFORMATION.

The term conformation covers the general build, form, shape, contour or outline of the carcass, side, or cut.

Best conformation involves: Short shanks and necks, deep plump rounds, thick full loins, well-fleshed ribs, and a thickness of flank commensurate with the depth of barrel and chest cavity.

Poor conformation involves: Angularity in general outline, prominent hip and shoulder bones, long thin neck, shanks, and rounds, shallow loins, and a decided lack of symmetry in the carcass or side.

Conformation is dependent on the skeleton, the depth of flesh and the thickness and distribution of external fat. Conformation

is largely a matter of breeding, although feed and care have an important influence.

Conformation has much to do with determining the relative attractiveness of the carcass or side. Its chief significance lies in the fact that it indicates the ratio between meat and bone, also the ratio between the more desirable cuts, such as rounds and loins, and the so-called coarser cuts, such as chucks and plates.

FINISH.

Finish refers to the thickness, color, character, and distribution of fat.

Best finish implies: A smooth, even covering of brittle, flaky, white fat over most of the exterior surface of the carcass, averaging not more than three-fourths inch thick over the top of the loin and ribs, and an even, though much thinner, covering of flaky white fat on the interior surface of the ribs; also heavy, but not excessively "bunchy" or wasty deposits of white fat over the kidneys, in the crotch, and in the chest cavity. It also involves relatively heavy deposits of fat between the larger muscles, and a liberal distribution of fat along the connective tissues and between the muscle fibers. This latter characteristic gives the cut surface a streaked appearance and is known as marbling. Rounds, shanks, neck, and belly are the last portions of the anatomy to be covered with fat; hence, generally speaking, and with due regard for the maximum depth over the hips, loins, and rumps, the more extensive the distribution of fat over these surfaces the higher the finish.

Poor finish implies: Deficiency in external and internal fat and marbling; uneven distribution, resulting in bunches, rolls, or patches of fat on certain portions of the carcass; or that the fat is soft, flabby, and yellow instead of firm, flaky, and white or creamy white.

The color, character, and evenness of distribution of fat are largely matters of breeding, but the quantity or thickness thereof is due to feeding and care.

A high degree of finish adds much to the attractiveness of a carcass or cut, but its chief significance lies in the fact that a certain amount of fat is essential to palatability. Furthermore, finish serves as an excellent index of the degree of quality of the meat.

QUALITY.

Quality is a characteristic of the flesh and the fat included therein. It pertains primarily to the thickness, firmness, and strength of both the muscle fiber and the connective tissue. It also involves the amount, consistency, and character of the juices or extractives which surround and permeate the muscle fiber and connective tissue. It is strongly influenced by marbling, which is due simply to deposits of well-filled fat cells along the connective tissue and between the muscle fibers. Although, strictly speaking, color does not determine quality, it serves as an excellent index to quality.

Best quality in beef implies: Full, well-developed, firm muscular tissue or flesh with a minimum of strength in fiber and connective tissue. Beef of this sort possesses a high proportion of juice to dry fiber, but this moisture must be of such consistency that the flesh

when chilled remains firm and resilient. There must also be liberal deposits of fat between the muscle fibers, giving the cut surface a streaked or marbled appearance. This fat, together with the juice or extractives, gives the meat juiciness and flavor. The cut surface of beef of this sort has fine grain, and is smooth and velvety to sight and touch. The color is a light or cherry red, because the blood supply has been kept at a minimum by lack of exercise and because of intensive feeding on grain or other ration producing similar effect, and because the animal was not old. The cut surface also presents a sheen or reflection not apparent in beef of poorer quality. This is due to the fine grain of the meat, the consistency of the juice, and the oil of the fat giving a smooth surface which reflects light much better than the relatively dry, or watery, coarse fiber of poorer quality beef.

Poor quality involves the opposite of most of the above characteristics. Beef of poor quality is usually of a dark red color, because the muscle has been subjected to prolonged, vigorous exercise and has therefore had a relatively large blood supply. For the same reasons the muscles are made up of strong, tough fibers and the connective tissues are comparatively thick and tendinous. Either the amount of juice is small or it is thin and watery. There is no marbling. As a result the meat is stringy, tough, and inferior in flavor. The ratio of muscle to connective tissue is relatively low, as is also the ratio of flesh to bone. The grain is coarse, and the general appearance is watery or fibrous.

Quality depends on a number of secondary factors. Breeding and feed are among the most important, but sex and age have an important bearing on the matter.

Quality determines the palatability of the meat and the ease with which it can be prepared for human consumption. Quality is, therefore, by all means, the most important factor in determining grade.

Determining quality is rather difficult, as quality pertains chiefly to the inner or concealed parts of the carcass, examination of which requires more than superficial inspection.

To determine quality exactly and absolutely it is necessary to have a cut surface, or cross section, exposed to view. But there is such close relationship between conformation, finish, and quality that the beef grader can nearly always count on a high degree of quality where the degree of the other two factors is high.

There are many other factors involved in grading beef and consequently many other terms used in describing and differentiating the various grades. It is believed, however, that these are all merely subdivisions of the three factors already named and described.[2]

For example, age frequently has much to do with indicating the grade of a carcass, but age in itself has no bearing on the matter, except as it affects conformation, quality, and finish. In the same manner fat is always considered in grading meat, but fat is one of the elements which go to make up quality and finish, and naturally contributes to conformation. The same is true of such secondary

[2] So-called "Yorkshire" or "tcswater" beef is found infrequently on the market and is regarded as a "freak of nature." The carcasses are deficient in covering and have very little fat on the kidney and interior walls. They usually have excellent conformation and quality. The flesh generally is fine grained and tender and is brownish-pink in color. The flesh, when recognized, sells readily at prices in line with those of choice beef cuts.

CARCASS BEEF FROM SHOW STEERS

SIDES OF STEER, HEIFER, COW, AND BULL

A, Side of steer; B, side of heifer; C, side of cow; D, side of bull

factors as color, grain, marbling, thickness of flesh, and several other terms. All are either included as factors under one or another of the three main characteristics just described, or serve merely as accompaniments and, therefore, indexes of conformation, quality, or finish.

The system of grading outlined herewith is confined to beef which is sound and wholesome. Meat which is diseased, bruised, or partially decomposed is not subject to grading: that is, it is "off grade." [3]

FRESH BEEF.

All commercial fresh beef may be divided into two general groups, "fresh chilled" and "fresh frozen."

Strictly speaking, this grouping is not a part of either classification or grading. It is wholly independent of quality, finish, and conformation, being based entirely on a method of processing or handling for preserving purposes.

FRESH CHILLED BEEF.

Modern meat-packing plants are equipped with large chill or refrigerating rooms which are held at temperatures ranging from approximately 34° to 38° F. In these the carcasses are placed shortly after slaughter to allow the animal heat to escape and the meat to cool and "firm up," preparatory to shipment or local distribution. After remaining in these rooms from 24 to 36 hours, the meat becomes thoroughly refrigerated, but not frozen. Beef handled in this manner usually is referred to as "chilled." The grade of the meat, however, is in nowise affected by such refrigeration. In fact, fresh beef may be so held for several weeks without injuring the quality. Ageing or holding beef for four to six weeks or longer under these circumstances renders the flesh of well-finished carcasses more palatable on account of the ripening process that takes place while the beef is held in storage around 36° F. Beef deficient in finish usually will not hold up or retain its soundness or palatability for more than three weeks under ordinary refrigerating conditions.

FRESH FROZEN BEEF.

Most packing and cold-storage plants are also equipped with what are known as "freezers," which are refrigerating rooms in which the temperature can be lowered to 5° or 10° F.—sometimes lower. Meat is placed in these rooms and allowed to remain until it is frozen solid. This requires from 12 to 36 hours, depending upon the character and temperature of the meat when it enters the freezer and the temperature at which the room is held. Heavy carcasses or cuts will naturally require a longer time than light ones. Frozen meat will remain sound and wholesome for an indefinite period, provided it is held below freezing. Before frozen meat can be disposed of at retail and used by the consumer, it must be thawed.

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[3] "Spotters" is a term applied to carcasses having small dark blood spots apparently caused by the rupture of minute blood vessels and the coagulation of small quantities of blood that did not escape at the time of bleeding. They are more frequent in well-finished carcasses. These spots, which often envelop the muscular tissue, vary in size from small specks to areas one-half inch or more in length and one-quarter of an inch or more in diameter. Many theories for this condition have been advanced by slaughterers, but the exact cause has not been determined.

Although freezing in no way affects the grade, so far as the average consumer in the United States is concerned, it vitally affects the meat's desirability. Most American consumers have a decided prejudice against frozen meat and will accept it only in times of scarcity or at substantial price discounts as compared with fresh chilled meat.

It is estimated that approximately 97 per cent of the fresh beef sold in the United States is "fresh chilled," whereas the bulk of the fresh beef exported is frozen. The growth of export trade in chilled beef, however, has been very marked during the past 10 years, and the number of ships equipped with refrigeration for carrying chilled beef has increased correspondingly.

BASIS OF CLASSIFICATION.

In the system of classification presented in this bulletin, class is determined by the sex condition of the animal from which the beef was derived. Although that is true, the real significance of sex condition consists in the fact that it implies uniform variations in degree of one or more of the three fundamental characteristics—quality, conformation, and finish.

For example, steer beef is, on the whole, uniformly superior in conformation to cow beef. Bull beef as a class is uniformly inferior in quality to steer or heifer beef. Hence, a given carcass is placed in the steer-beef class primarily because the animal which produced it was a steer, but the act of so placing the carcass derives its chief justification from the fact that steers, as a class, represent a certain uniform combination of quality, conformation, and finish.

In a given class, quality, conformation, and finish appear in a fairly definite ratio, and this ratio shows only slight variations within the class. Each class has its own ratio which distinguishes it from every other class. These distinctive ratios are due to sex condition.

All beef, then, is divided into five classes—steer, heifer, cow, bull, and stag.

Perhaps variation in conformation constitutes the greatest difference between classes, but between certain classes the difference in quality is very great. In the following definitions an effort has been made to point out the important differences between classes and to indicate the degree of variation in fundamental characteristics.

These definitions consist largely in describing the physical characteristics of each class, which amounts in most cases to comparing one class with other classes in respect to the degree of quality, conformation, and finish. In all such comparisons it is understood that the things compared are of the same grade. For example, steer beef as a class possesses better finish than cow beef, but the statement would not hold if Common steer beef were compared with Choice cow beef.

STANDARD CLASSES OF BEEF.

As one of the first problems confronting the beef grader is to determine the sex of the animal which produced the meat, the more important characteristics which are peculiar to each sex, and which

therefore differentiate male from female carcasses, will be pointed out. Of these, the presence of cod fat in steer carcasses and its absence in female carcasses are the more important.

In all carcasses of males of the bovine family there is a tendinous ring near the posterior point of the aitch[4] (or pelvic) bone. The female does not have this. Trimming away the male sexual organs usually exposes to view the muscle of the round which lies between the posterior end of the aitch bone and the exterior surface of the round or thigh, whereas in the female such trimming is not necessary, and this muscle is usually concealed by fat. Furthermore, this muscle is generally somewhat thicker in the male than in the female, which, in the male, increases slightly the distance between the end of the aitch bone and the outer surface of the round.

Because of the greater depth of the pelvic arch in the female, the distance between the aitch bone and the tail root is greatest in the female, and because of the greater width of the pelvic arch, the distance between the posterior tips of the pelvic bones is greater in the female than in the male. Naturally this latter characteristic can be noted only in the carcass and not in the side.

In the forequarters of a male carcass, the shoulders are usually coarser and more heavily muscled, the ribs show less curvature, and the neck is shorter and thicker than in the female. When viewed from the side the fore shank of a female carcass—from the elbow to the knee—presents a smoothly-tapered appearance, whereas in a male carcass the lower or knee end of the shank shows a rather pronounced flare or knob. This is partly due to the more rugged structure of the knee joint in the male.

As a rule, all bones in the male are larger than in the female, but the latter is likely to carry a greater amount of fat, particularly on the interior of the carcass and over the loin and rump. For that reason, male carcasses generally carry a larger proportion of lean meat to total weight, despite their larger bones.

Having determined the sex of the carcass or side, the next step for the grader is to determine the class within the sex to which it belongs. Beef from the male sex falls into three classes—steer, bull, and stag; that from the female sex into two classes—heifer and cow.[5]

STEER BEEF.

Steer beef is from a male that was castrated before he advanced far enough toward sexual maturity to make reproduction possible. The animal must also have progressed beyond the veal and calf stages. Beef of this class is distinguished from either cow or heifer beef by

[4] "Aitch bone" is a term used to indicate the portions of the pubic arch which are exposed as a result of splitting the carcass. It is a trade term and not a scientific name. Strictly speaking, it is not a bone, but only one surface of a bone.

[5] In recent years a few cattle producers and feeders have made an effort so to manage their breeding and feeding operations as to bring their cattle to virtual maturity at from 8 to 15 months of age. When this is done, the beef resulting from slaughter retains many of the characteristics of veal, but also possesses many of those of mature beef. Such meat has come to be known as baby beef. In ordinary trade practice, however, the term baby beef is frequently applied to meat which has no other claim to distinction than light weight. The question arises as to whether so-called baby beef should be considered as a distinct commodity, separate from either beef or veal, as a class of beef, or merely as representative of one or more grades of steer and heifer beef, according to the sex of the animal. Bcause of this confusion on the part of the trade, baby beef has been omitted from this bulletin, but will be considered in a separate publication at a later date.

the characteristics already pointed out as belonging exclusively to males.

Steer beef is distinguished from bull beef by the presence of cod fat, which a bull carcass does not have. It differs from stag beef by possessing a greater amount of such fat. In a steer-beef carcass the inguinal ring is somewhat smaller than in a stag and much smaller than in a bull. In conformation, finish, and quality steer beef is superior to any other class. Such carcasses also show the highest dressing percentage or yield.

HEIFER BEEF.

Heifer beef is from a female that has passed beyond the veal and calf stages, but has never had a calf, and has not reached advanced pregnancy. Such beef is distinguished from steer, stag, or bull beef by all of the general characteristics peculiar to the female sex. It differs from cow beef by possessing more compact form, less prominent hips, less curvature or spread in the ribs, and greater curvature of the aitch bone and pelvic arch. In dressing a heifer, the udder is left on the carcass, whereas it is usually removed from a cow.

Heifer beef is superior in conformation, finish, and quality to all other classes, except steer beef, and it frequently nearly equals steer beef. Sometimes individual carcasses rank as high as steer beef in one or another of the above respects, but as a class it is slightly inferior.

Heifer beef carries less fat than cow beef, particularly on the interior surfaces, around the internal organs, and over the rump, and the external fat is more evenly distributed than in cow beef.

Heifers supply a smaller percentage of the total beef supply than either steers or cows, but a much larger percentage than either bulls or stags. In dressing percentage they average higher than bulls and cows, but generally not so high as either steers or stags. Market prices of heifer beef are higher than stag, cow, or bull beef and frequently equal those of steer beef.

COW BEEF.

Cow beef is from a female which has had one or more calves, or was advanced in pregnancy at the time of slaughter. Cow beef has all the characteristics peculiar to the female sex, which distinguish it from steer, stag, or bull beef.

It differs from heifer beef in that the udder has been removed, or shows evidence of maturity if left on. In some instances, where deception is attempted, the udder is left on young cows to make the carcasses resemble those of heifers. When this is done, however, the deception may usually be detected by the open and frequently lactating milk ducts which are generally present in cow udders.

Carcasses and sides of cow beef are generally more angular in conformation than any other class. Hip bones are prominent and wide and there is a decided curve or dip in the outline of the back just forward of the rump, which generally becomes more marked with advancing age of the animal. The ribs show a relatively high degree of curvature and the covering of flesh on them is comparatively thin. The fat may be generous in quantity, but it is unevenly distributed, frequently appearing in "rolls" or "ties" on certain

parts of the back, rump, and upper part of the round, and the internal fat is in much the same condition. The fat of cow beef usually has a decidedly yellow tinge, and is rather oily in appearance instead of being white and flaky, as it is in the higher classes of beef.

Cow beef is inferior in conformation to all other classes, but is superior to bull beef in finish and superior to both bull and stag beef in quality. In dressing percentage, cows rank at the bottom of the list of beef animals. The market price of cow beef is usually lower than that of any other class, except bull beef.

BULL BEEF.

Bull beef is from an uncastrated male that has advanced far enough toward sexual maturity to make reproduction possible. It is distinguished from cow and heifer beef by the general characteristics peculiar to all males. It has no cod fat and thereby differs from steer beef and from most stag beef. The inguinal ring is somewhat larger than in a stag carcass and much larger than in a steer carcass. External and internal fat is extremely scanty. On the exterior surface there is usually so little fat that over a large part of the carcass the muscle or lean meat is exposed to view. This, together with the fact that bull beef is generally very dark red in color, gives the carcass or side the decidedly bluish cast which is one of the outstanding characteristics of bull beef.

Although there is a scarcity of fat in bull beef, there is usually an abundance of lean meat, the entire frame being heavily muscled. This is particularly noticeable in the forequarters. The shoulders are generally heavy, and have the appearance of coarseness in conformation. The neck is short and thick and is crowned on the upper side by a crest or hump of heavy muscle.

Bull beef is superior to cow beef in conformation, but is inferior to all other classes in finish and quality, and in general is not suitable for block purposes. In dressing percentage, bulls outrank cows, but, as a rule, rank below all other classes. Market prices of bull beef are lower than those of any other class. Comparatively little bull beef is dispensed in the fresh-beef trade, as the bulk of it is used for sausage and dried beef.

STAG BEEF.

Stag beef is from a male that was castrated after it had advanced far enough toward sexual maturity to make reproduction possible. It possesses all of the characteristics peculiar to males. The inguinal ring is usually smaller than in a bull carcass, but slightly larger than in a steer carcass. There is wide variation in stag beef, such variations depending largely on the age at which the animal was castrated. If castration was done at a comparatively early age, the carcass may make a very close approach in conformation, finish, and quality to that of a steer or heifer. If, on the other hand, the animal had attained considerable age, and had possibly been used for breeding purposes for a considerable time before castration, the carcass will possess most of the distinctive characteristics of bull beef. One characteristic which is very persistent, and is almost always present to at least a noticeable degree, even where castration

was done at a comparatively early age, is the thickening of the muscle on the top of the neck which forms the crest.

Because of the limited supply, stag beef is one of the minor classes. In conformation and finish, stag beef surpasses cow and bull beef, but it is inferior to steer and heifer beef. In average quality it is superior to bull beef, but inferior to all other classes. In dressing percentage, however, stags are usually surpassed only by steers. Market prices of stag beef vary widely, depending largely on whether, in respect to the fundamental characteristics, it shows a strong resemblance to bull beef or to the higher classes. On the whole, prices probably average higher than those of cow or bull beef, but lower than steer or heifer beef.

It has already been shown that classes of beef involve uniform variations in the three fundamental characteristics—conformation, finish, and quality. The following table shows the relative standing of the various classes with respect to each characteristic. In individual instances exceptions are bound to occur, but it is believed that the following arrangement represents the general rule. Dressing percentage has nothing to do with determining either class or grade, but is added to the table for whatever value it may have.

Relative excellence of the classes of beef.

	Steer.	Heifer.	Cow.	Stag.	Bull.
Conformation	1	2	5	3	4
Finish	1	2	3	4	5
Quality	1	2	3	4	5
Dressing per cent	1	2	5	3	4

GRADING FRESH BEEF.

Grading is simply a continuation of the same analytical process used in classifying. In the first instance, the whole commodity of beef was divided into five general groups called classes. This first grouping, however, was along rather broad lines, and each class presented such a wide range of variation in virtually all fundamental characteristics that it was impossible satisfactorily to consider the class as a whole with a view to determining its value. The object in all grading is to accurately determine values.

Therefore, it is now proposed to subdivide the commodity still further. For example, to take a given class, such as steer beef, and divide it into smaller lots in such a way that the individual units which make up a given lot will have virtually the same degree of conformation, finish, and quality. In other words, each lot will be highly uniform in all essential respects. This grouping constitutes grading.

BASIS OF GRADING.

Grades of beef are based on variations in one or more of the three fundamental characteristics—conformation, finish, and quality. As a rule, variations occur in all three, but it is possible for two carcasses to be identical with respect to two characteristics and yet be placed in different grades because of variations in the third.

Of the three fundamental characteristics, quality is, by all means, the most important. All beef is bought and sold very largely on the basis of quality. Many factors are taken into account by the beef grader before he makes his final determination as to grade, but his main object is to arrive at the degree of quality of the beef. The reason for this is that quality is the thing with which the consumer is most concerned.

The grader considers the firmness, color, and texture of the meat. He determines the age by the color and hardness of the bones, and he carefully notes the marbling or lack of marbling in the flesh. All of these things, however, are of value only as indicators of the quality of the carcass or cut. Even conformation and finish are of comparatively small consequence in themselves. They are, however, of vast importance because of the bearing which they have on the major consideration, which is quality.

The consumer applies the ultimate test of quality when he eats the beef. Fortunately for the grader, however, there is such a close relationship, amounting in some instances to cause and effect, between quality and a number of other more obvious and easily determined factors, that it is possible for him to determine very accurately what the degree of quality is. For example, finish is easily determined and a high degree of finish almost always accompanies a fair degree of excellence in quality.

Conformation is a still more obvious characteristic, and nature has so arranged matters that excellent conformation and a high degree of finish rarely exist without being accompanied by a commensurate degree of quality. Quality, therefore, is always uppermost in the mind of the grader, and carcasses and cuts of beef are placed in the various grades very largely on the basis of variations in quality.

STANDARD GRADES OF BEEF.

There are seven grades of beef: Prime, Choice, Good, Medium, Common, Cutter, and Canner. Using the corresponding numerical designations, the grades are No. A 1, No. 1, No. 2, No. 3, No. 4, No. 5, and No. 6. In the following discussion, the terms and corresponding numerical designations are combined for the purpose of enabling one to associate them.

Not all classes of beef, however, are divided into the full quota of grades. For example, steer beef and heifer beef each are divided into seven grades, No. A 1, or Prime, representing the highest, and No. 6, or Canner, the lowest grade. Cow beef, bull beef, and stag beef, on the other hand, are divided into six grades, No. 1, or Choice, representing the highest; and No. 6, or Canner, the lowest.

The question arises as to why there should be this variation in the number of grades into which the various classes are divided. It might logically be argued that one of two courses should be pursued in the matter: Either the various grades should be standardized, without regard to class distinction, or each class should be considered as a more or less distinct commodity.

If the grades, as such, are standardized, then Good beef is Good beef, whether it be derived from a steer carcass, a cow carcass, or a bull carcass. If, on the other hand, the grades are not standardized as grades of beef, but merely as grades of the various classes of beef.

then it might be argued that there is no reason why all classes should not be divided into an equal number of grades.

Under this latter system there would be no such thing as Good beef, but in each case it would be Good steer beef, Good cow beef, etc., each differing from all others in certain essential respects. Under such a system, No. A 1, or Prime grade, would represent not the highest grade of beef as a commodity, but merely the highest grade within each class.

The idea of so standardizing the grade that Good grade beef, for example, would represent a definite, well-defined thing, regardless of the class from which it was derived, is one which appeals strongly to the imagination. From the standpoint of simplicity it would be an ideal arrangement. This is particularly true because when the beef reaches the consumer he is not at all concerned as to the particular class of beef it represents, and even if he were so concerned he would have extreme difficulty in determining the class unless it belonged to a grade near one or the other extremes of the range. The fact remains, however, that the trade does discriminate very carefully between the different classes. Hence there must be some definite reason for such discrimination.

Having in mind the three fundamental characteristics on which grading is based, it is impossible to so arrange the grades in the various classes that they will be wholly comparable as between classes. For example, there is probably no grade or possible grade of cow beef that is identical with any grade of steer beef, nor is it conceivable that any grade of bull beef would be wholly comparable with any grade of cow beef.

It frequently happens that two carcasses belonging to different classes are virtually identical with respect to one or two characteristics. For example, certain grades of cow beef frequently are fully equal in quality to similar grades of steer beef. When this is true, almost invariably there are variations in the other characteristics, such as conformation and finish, which are so pronounced as to furnish a decided distinction between the two and make it inadvisable and impossible, so far as trade practice goes, to put the two in the same group.

Perhaps the reason for the incomparability of beef belonging to the different classes, and hence the impossibility of standardizing grade irrespective of class, may be illustrated by considering three grades of steer beef and a corresponding number of grades of cow beef. If in each case grade No. 1 is represented by 100, grade No. 2 by 80 and grade No. 3 by 60, it will be obvious that in each class, grade No. 2 is 20 points under grade No. 1, and grade No. 3 is 20 points under grade No. 2. It should be borne in mind that it is all beef and that in both classes the grades are based on the three characteristics—conformation, finish, and quality. This being true, in each class the 20-point variation between grades represents a 20-point variation in each of the three characteristics, conformation, finish, and quality. Despite this fact, however, the two are not strictly comparable, grade for grade.

The reason for this consists in the fact that although in each class 100 points, representing the top grade, was made up of conformation, finish, and quality, the relative degree of these characteristics varied

with the class. In other words, the starting point was not the same in both instances. For instance, in the case of steer beef the weights might run as follows: Conformation 20, finish 30, and quality 50, whereas in cow beef the weights might be assumed as: Conformation 15, finish 25, and quality 60. Considering grade No. 2 as 20 points under grade No. 1, the same weights would be applied to the different characteristics, and so on with grade No. 3 and the lower grades.

With this in mind, it is apparent that although grade No. 3 in cow beef is indicated by 60 just as it is in steer beef, and for that reason grade No. 3 in cow beef is 40 points under grade No. 1, and despite the further fact that all grades are based on the same three fundamental characteristics, the fact remains that grade No. 3 in cow beef differs from grade No. 3 in steer beef not because it is made up of different characteristics, but because in the two classes those characteristics appear in different proportions.

In a word, the beef grader does precisely what the student in stock judging does when the latter uses a score card. In his mind the beef grader assigns certain weights to each of the characteristics—conformation, finish, and quality—and, while those weights are uniform throughout a given class, they vary between classes.

To sum up, in the system of grading outlined herewith, the best or top grade of cow beef is called No. 1 or Choice, instead of No. A 1 or Prime, simply because the degrees of conformation, finish, and quality in best cow beef and in the second grade of steer and heifer beef are more nearly equal than is true of best cow beef and No. A 1 or Prime steer or heifer beef. In the same manner the best bull beef and the best stag beef produced are called No. 1 or Choice, because the variations in degree of conformation, finish, and quality between such beef and No. 1 or Choice steer and heifer beef are less than between such bull and stag beef and the best beef in the other classes.

It is apparent that beef grading probably will never be reduced to the stage of exactness of application that has been reached in the grading of apples, oranges, potatoes, cotton, or grain. Some allowance must always be made for the personal equation of the commercial grader, who is forced to form his judgments at sight. However, there can be much greater exactness and much more uniformity in the determination of grades than has been in evidence in the trade heretofore.

Despite the fact that each class of beef has been subdivided into six or seven grades, each grade still represents such a wide range of variation in the fundamental characteristics that intermediate or subgrades are often resorted to by the trade. Generally these subgrades are indicated by the prefixes Top, Medium, and Low, the usual form of expression being Top Good, Medium Good, or Low Good, and the same with most of the other grades.

This "width" of the grades is generally reflected in a rather wide range of market quotations on the various grades. The trade almost never quotes a flat price on any given grade, the market value of beef belonging to a given grade usually being expressed in the form of a price range, such as "good steer beef, $15 to $18 per 100 pounds." It is impracticable, however, to describe these subgrades in a work of this sort. Detailed descriptions, therefore, of only the

major grades, which are generally recognized by the trade and are therefore eligible for standardization, have been attempted.

In the descriptions of grades of beef which follow, no attempt has been made to fix definite lines of demarcation between grades. Reference to the definitions of grade and of the three fundamental characteristics on which grade depends will at once show, not only the wisdom of such a course, but the impossibility of doing otherwise. Grades consist in degrees of variation, in conformation, finish, and quality, and no way has yet been devised whereby the degree of variation may be mathematically measured.

The purposes of this bulletin are to establish the principle of classifying and grading beef, and to fix as accurately as possible the type most representative of each grade. Minute descriptions of the carcasses, sides, or cuts which typify each grade are given. Such types, therefore, should be considered representative of the middle of the grade and reasonable variations both above and below the standard described should be expected. Obviously, in actual practice, specimens will be encountered which show considerable variation from the standards set up. The significance of this is merely that the specimen is very near the border line between two grades. In such instances the grader must check his data carefully with a view to determining the grade standard to which the doubtful specimen makes the nearest approach. Having made this decision, the beef will, of course, be placed in that grade.

Great care has been exercised in selecting nomenclature that is most suggestive of the grade. Those terms have been adopted which have been in most general use, but with varying significance, by the trade, the press, and students of the industry.

In order to standardize or fix these terms more clearly in mind, their definitions follow.

No. A 1, or Prime.—No. A 1, or Prime, beef represents the best results of beef-cattle breeding, care, and feeding. Only beef from the highest types of beef cattle, that have been fed intensively on grain or other fattening and flesh-forming rations, are found in this grade. Cattle which produce this grade have unusually high dressing percentages and lack excessive amounts of wasty fat. The average dressing yield is about 60 per cent of the live weight. They are young, usually under 3 years of age. The carcasses are perfect in quality, conformation, thickness of flesh, finish, texture, grain, and tenderness, and generally weigh between 500 and 700 pounds and not infrequently more. The number of such carcasses from all classes on the market, during the year, is very small, probably under 0.1 per cent of the total annual supply of carcass beef, excluding Canner and Cutter grades. They are in evidence in limited numbers, especially following the National and International Livestock Shows and during Christmas holidays. They are the "exhibits" of the beef trade, and are derived almost entirely from cattle that have been prepared for show purposes. The grade is composed principally of steers. There are a few Prime heifer carcasses, but no Prime cow, bull, or stag carcasses.

No. 1, or Choice.—No. 1, or Choice, beef closely resembles No. A 1, or Prime, in nearly every respect. It generally is slightly deficient in quality and in finish. The fat may be slightly excessive or wasty,

or it may be less than required for the Prime grade. Carcasses in this grade usually are from young animals of superior beef breeding, under 3 years of age, that have been fed intensively, but possibly not to the degree of those producing Prime beef. Such carcasses are blocky, thick, smooth, and far above the average. Beef of this grade is more plentiful in winter and spring, but is available in limited quantities throughout the year. Steer carcasses predominate.

The grade also contains a small percentage of heifer beef and, occasionally, a few carcasses derived from well-finished young cows of the beef type. Practically no bull or stag beef is comparable in quality to No. 1, or Choice, beef in the steer, heifer, and cow classes. The trade, however, finds it convenient to apply this grade to bulls and stags, and for that reason the grade in those classes is recognized.

No. 2, or Good.—The No. 2, or Good, grade includes a larger number of carcasses than Prime or Choice. Good beef is above the average in quality, conformation, and finish. It admits a wider range in age than do the higher grades. The carcasses are blocky, thick, smooth, and well-covered, usually showing some beef-type breeding, care in handling, and a moderate amount of intensive feeding on grain or concentrates. Such beef may meet most of the requirements of Choice beef, but be too fat and wasty to rank in that grade, or it may lack the necessary finish.

A small percentage of beef derived from superior types of beef cattle fattened on grass and feeds other than grain and concentrates, also appears in this grade. This grade is the lowest that shows any appreciable amount of marbling. Good carcasses are found on the market throughout the year, but are more plentiful in winter and spring. The weight rarely falls below 450 pounds. The relative rank of the classes with respect to numbers of carcasses contributed to this grade is as follows: steer, cow, heifer, stag, and bull.

No. 3, or Medium.—No. 3, or Medium, grade represents the average of beef carcasses. More than 50 per cent of all carcasses marketed annually fall within this grade. They are neither superior nor strikingly deficient in quality, conformation, or finish. The frames are slightly angular, the bones relatively prominent, and the flesh of average thickness. The fat, while in evidence and fairly well distributed, is not plentiful, except in fat cow carcasses.

Carcasses of this grade are in good supply throughout the year, but are more abundant in the summer and fall, when the better grades are relatively scarce. Weights range as low as 350 pounds. The relative rank of the classes numerically is about the same as that in the Good grade, but cows and steers are about equal.

No. 4, or Common.—Beef falling in the No. 4, or Common, grade is all the term implies. It is usually derived from poorly-fed animals, scrubs, dairy, and thin range cattle. It is very deficient in quality, conformation, and finish, and generally shows advanced age. Carcasses are angular in shape, the bones are very prominent and generally white and flinty. The fat covering and the interior fats are yellowish, very scarce, and of poor quality. Often the exterior fat is so thin as to give the carcass a dark or bluish appearance. The flesh is usually tough and very shallow in all parts. Common is the lowest grade of beef offered regularly to the trade in carcass form under normal trade conditions. The entire carcass

of a lower grade is not suitable for the butcher's block, and many Common carcasses are used for Cutter and Canner purposes. Common grade beef is usually in evidence throughout the year, but is more abundant in the summer and fall. Cows contribute most to this grade, with steers, bulls, stags, and heifers, ranking in the order named. This grade represents about 20 per cent of the total annual supply of carcass beef.

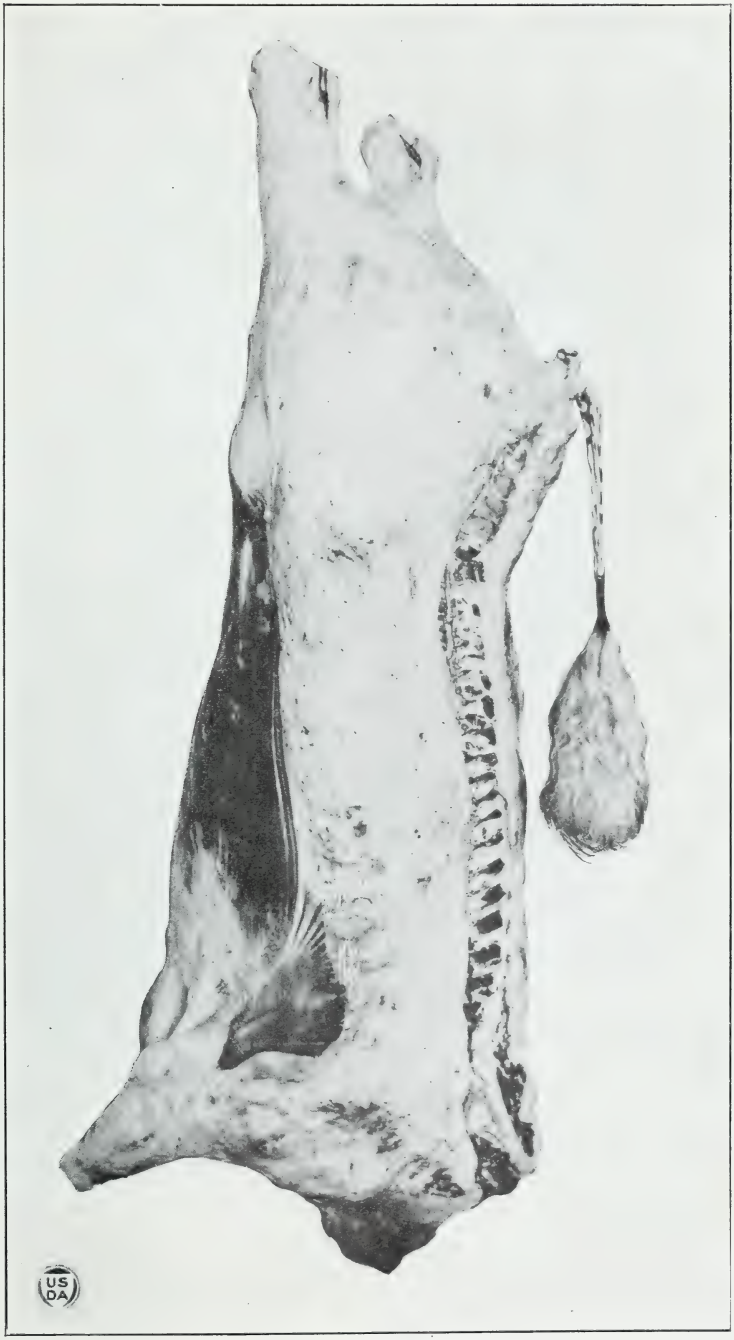
No. 5, or Cutter.—Cutter grade beef is so deficient in form, finish, and quality that it is rarely marketed in carcass form, except in seasons of scarcity. The word "cutter" is a trade term, and refers to the manner in which such carcasses are marketed—generally in cuts. Usually, only the ribs and loins of such carcasses will be accepted by the retail fresh-meat trade. Cutter carcasses, as a rule, lack fat covering, except for a thin coat over the back. The flesh is too thin, except in the ribs and loins, to make satisfactory cuts. Carcasses of this grade are therefore usually boned out for the boneless meat trade, and for curing, sausage, and canning purposes. The rounds often are converted into dried beef hams. Cows contribute most to this grade, which includes very little beef from the other classes. Carcasses thrown out of any grade because of extensive bruises often are referred to as "cutters," because they are never sold in sides or quarters, but are sent to the cutting departments, where the sound parts are converted into commercial cuts. When thus treated, the cuts fall in the grade to which they belong on the basis of quality, conformation, and finish. "Cutter" in this sense has no reference to the "cutter" grade.

No. 6, or Canner.—No. 6, or Canner, grade is the lowest form of beef that is offered for human food. Carcasses that are unfit, in whole or in part, for the butcher's block come within this grade. They are often in such poor condition as to appear to be from animals suffering from anemia. This is especially true of old, worn-out dairy cows. The grade is composed very largely of beef from this class of livestock, and of starved or emaciated animals from other classes. Practically all carcasses of this grade are boned out. The meat is used chiefly for canning and sausage. A small percentage of boneless strips and cured beef is also obtained from this grade.

GRADES OF STEER BEEF.

There are seven grades of steer beef: No. A 1 or Prime, No. 1 or Choice, No. 2 or Good, No. 3 or Medium, No. 4 or Common, No. 5 or Cutter, and No. 6 or Canner.

No. A 1, or Prime, steer beef.—No. A 1, or Prime, steer beef has ideal conformation. The outlines are especially attractive and suggestive of high-grade, palatable flesh. The carcass is relatively short and blocky, and is heavily and uniformly fleshed throughout. The rounds, loins, and ribs are exceptionally well-developed and rounded. The chucks and plates are very thick and compact, and heavily fleshed. The neck is short and plump. The shanks are short and well muscled. The superior development of the round extends well over, almost enveloping, the hind shank, giving much beyond the average amount of flesh there. Soft, pearly-white cartilages are found on the spinal processes or the chine bones and on the breast bones. The bones are soft and red with blood vessels,



NO. A1 OR PRIME STEER CARCASS

SIDE OF NO. 1 OR CHOICE STEER

and the carcass presents every evidence that the animal had not gone far past 3 years of age.

The finish is ideal, being neither excessive nor deficient. There is an abundance of marbling in the thick cuts. The exterior surface of the carcass, including shanks and neck, is entirely covered with a smooth, brittle, slightly creamy-white fat that is not excessively thick or wasty at any point, the greatest depth being over the loins and ribs, which generally does not exceed three-fourths of an inch. The interior walls are well covered. The cod, kidney, crotch, and other interior fats are abundant but not excessive, and are firm, crumbly, and of creamy-white color. An excessive, or slightly deficient, amount of fat will bar from this grade a carcass otherwise of prime quality.

No. 1, or Choice, steer beef.—No. 1, or Choice, steer beef does not differ radically from Prime steer beef. It is of excellent quality, conformation, and finish, but is slightly below Prime grade in one or more of the qualifying characteristics. The greatest variations generally occur in quality and finish, but in no case are these pronounced.

The fat covering is smooth or slightly wavy. The cod, crotch, kidney and other interior fats may be slightly less or more than required for the ideal carcass. Often such fats are more abundant and wasty, but they are always of the best quality and are similar in color and consistency to those in Prime beef. The cartilages on the chine and breast bones are pearly-white, but may be slightly ossified, and the bones may be soft and red, or slightly hardened, and of grayish-white color, especially if the animal was nearing 4 years of age. Marbling is always present in the loins, ribs, and chucks, and the flesh is firm, velvety, and of an attractive light or cherry red color. All beef surpassing the specification for the Good grade, but failing to qualify as Prime, belongs in this grade. While No. 1, or Choice, beef may appear on the market at any time during the year, it is never abundant and is more in evidence in the winter and early spring. The weights are similar to those of Prime grade.

No. 2, or Good, steer beef.—No. 2, or Good, steer beef has good conformation, finish, and quality. In these respects it is above the average, but does not qualify for Choice grade. The carcass generally does not have the blocky, well-rounded form of those in the superior grades, but is more angular. The hip and shoulder joints are slightly visible, the loins and ribs are moderately round and plump, but inclined to flatness. The rounds, while reasonably thick and heavy, are not full toward the shank. The shanks are inclined to be long and tapering, but not to a marked degree. The fat covering extends well over the exterior surfaces, generally is firm, and at times slightly bunchy, especially over the loin, rib, and neck. The lower part of the rounds, shoulders, neck, and shanks generally has little or no fat covering. The cod, kidney, crotch, and other interior fats are in moderate supply, and are sometimes wasty. Fat generally does not extend completely over the walls of the forequarters, as in the better grades. The fat is of good quality, but often is soft and may have a slightly yellowish tinge. The cartilages on the chine and breast bones usually have lost their pearly luster

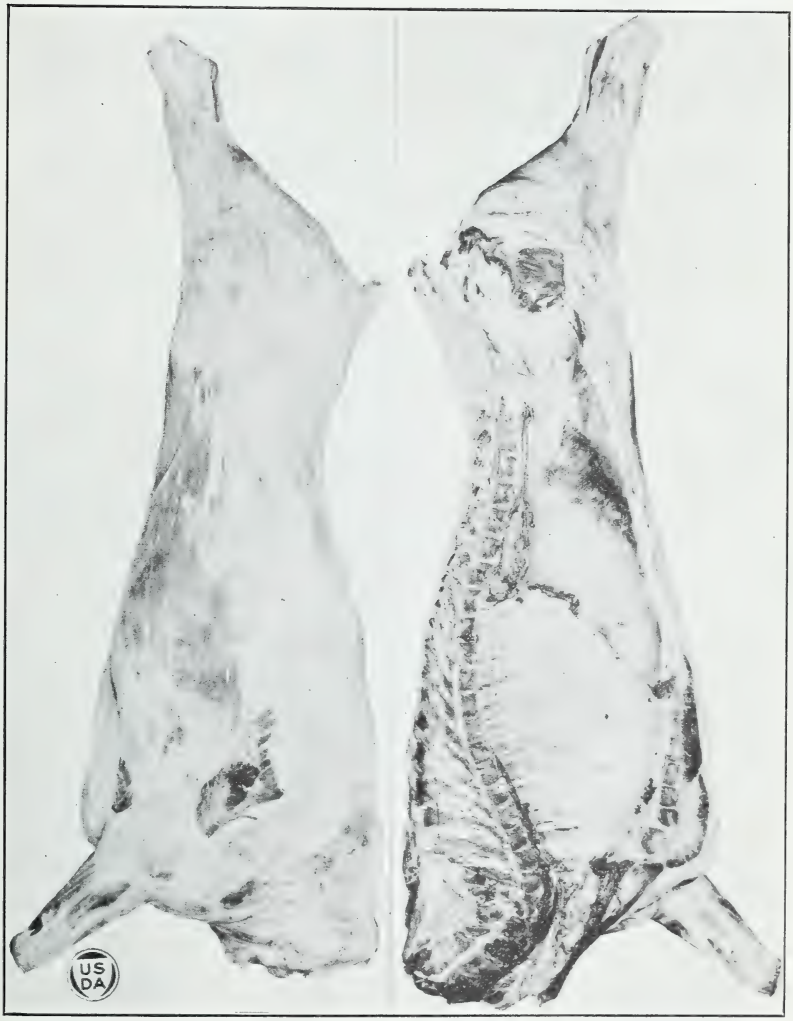
and have become partly ossified and firmly attached to the bones, which, in such cases, are somewhat hard and gray. This does not apply, however, to carcasses of animals slaughtered under 3 years of age. The "eye"[6] of the rib and loin is above the average in thickness and shows some marbling, but the Good grade is the lowest in which this last characteristic appears.

The flesh generally is of good color, but may be a shade darker than that of Choice or Prime beef, and often is somewhat soft and slightly inclined to be watery. This grade is on the market in moderate quantities throughout the year, but is more abundant in the late fall, winter, and spring months. A very few Good steer carcasses average as low as 350 pounds. The range is from this weight upward.

No. 3, or Medium, steer beef.—No. 3, or Medium, steer beef has irregular or rugged conformation. This is apparent in the general outline of the carcass, which shows a deeper curvature of the back, rough and proportionately large chucks and plates, long shanks, prominent hip and shoulder joints, flat or depressed loins and ribs, long neck, relatively long, flat and tapering rounds, and prominent bones. The flesh throughout the carcass is of average thickness and this grade reflects the average of quality of carcass beef on the market throughout the year. Because of the shallowness of flesh and thinness of fat covering, the broad sinew which runs along the backbone is often visible. The fat covering is fair over the back, but very thin or entirely absent over a large part of the rounds, chucks, neck, and shanks. There is a small amount of cod, kidney, and crotch fat. The other interior fats are present but very thin. They do not cover the inner walls of the forequarter, but are more in evidence in the hindquarter. They generally are of a yellowish-white color, soft, and of average quality. Usually the cartilages are hard and white, and the bones grayish, or white and flinty. This does not apply to carcasses of animals under 4 years old, a liberal number of which are in the Medium grade. The "eye" of the loin and rib, which varies according to the flesh condition and size of the animal, lacks the depth noted in the better grades, but in this grade is generally sufficiently thick to satisfy the average popular demand for steaks and roasts. The flesh usually is coarse, "stringy," soft, and watery, and inclined to a slightly dark red color. It has no marbling, but has sufficient finish and quality to satisfy the average consumer. Carcass weights range from 350 to 750 pounds, according to the type and age of the animal.

No. 4, or Common, steer beef.—No. 4, or Common, steer beef is decidedly deficient in quality, conformation, and finish. It is the lowest grade of steer beef appearing regularly on the market. The outlines are irregular, or angular, and rangy. The hip and shoulder joints are prominent, and the chucks and plates are relatively wide and thin. The loins and ribs are flat, or sunken. The broad ligament along the backbone is plainly visible. The rounds, neck, and shanks are long and thinly fleshed. Bones are prominent, and generally white and flinty, and the cartilages usually are completely ossified. Such beef has very little exterior fat covering, which is con-

[6] The "eye" of the rib, or loin, is a term used to describe the appearance of the cut surface of the heavy muscles of the back at the point where the side is quartered.



SIDE OF NO. 2 OR GOOD STEER

SIDE OF NO. 3 OR MEDIUM STEER

fined almost exclusively to a thin covering over the loins and ribs, and is of a yellowish-white color. The cod, crotch, kidney, and interior walls have very little if any fat, and this is of very poor quality. The "eye" of the rib and loin is decidedly lacking in size, which indicates a deficient covering of flesh throughout the carcass. The flesh is decidedly coarse, soft, "stringy," tough, and watery, and of dark-red color. This grade is found on the market at all times, although in limited amount during late winter and early spring. Carcass weights range from 300 to 550 pounds.

No. 5, or Cutter, steer beef.—Beef of the Cutter grade usually comes from ill-shaped, emaciated steers. Poor feeding, lack of breeding, and old age are the main reasons for the appearance of this grade of beef on the market. The carcass is decidedly deficient in virtually all of the characteristics demanded by the consumer of block beef. Conformation is angular, and the only fat on the exterior surface is a thin covering over the back. The flesh on most parts of the carcass is so thin, and the ratio of bone to flesh so high, that few consumers will accept it. Hence most of the carcass is boned out and sold either as boneless cuts, or cured and used in sausage. Sometimes one or two cuts, usually the loins and ribs, are sold without boning, hence the term "cutter." Although such beef is always present on the market in limited quantities, it is particularly noticeable after periods of drought and in sections where cattle raising has not made much progress, and where the purchasing power of the average consumer is very low.

No. 6, or Canner, steer beef.—Canner steer beef is the lowest grade of steer beef recognized by the trade. It includes a nondescript lot of carcasses which are so deficient in flesh and fat that they can not be sold in retail cuts. They are therefore boned out, and used either for canning or sausage. Comparatively little Canner steer beef is offered, under normal conditions; but during periods of drought considerable numbers of steers, so emaciated that the carcasses can be utilized only in this way, go to market.

GRADES OF HEIFER BEEF.

There are seven grades of heifer beef: No. A 1 or Prime, No. 1 or Choice, No. 2 or Good, No. 3 or Medium, No. 4 or Common, No. 5 or Cutter, and No. 6 or Canner.

No. A 1, or Prime, heifer beef.—Normally, the quantity of Prime heifer beef available is negligible. The few carcasses that are found so closely resemble those of prime steers in every respect, except sex, that a separate description of the grade is not made in this publication. For all practical purposes, the description of No. A 1, or Prime, steer beef can be applied to No. A 1, or Prime, heifer beef.

No. 1, or Choice, heifer beef.—No. 1, or Choice, heifer beef has excellent quality, conformation, and finish. In most respects it does not differ materially from steer beef. The greatest variation is in conformation, due to the difference in sex. A Choice heifer carcass is slightly less rugged in appearance than is that of a Choice steer. The outlines are regular, smooth, and graceful, and suggestive of an abundance of flesh which has a fine grain, and is of light to medium-red color. The loins, ribs, and rounds are full-fleshed and well-rounded, but to slightly less degree than those of a Choice steer.

The chucks and plates compare favorably with those of steer beef, and the shanks and neck are small and plump.

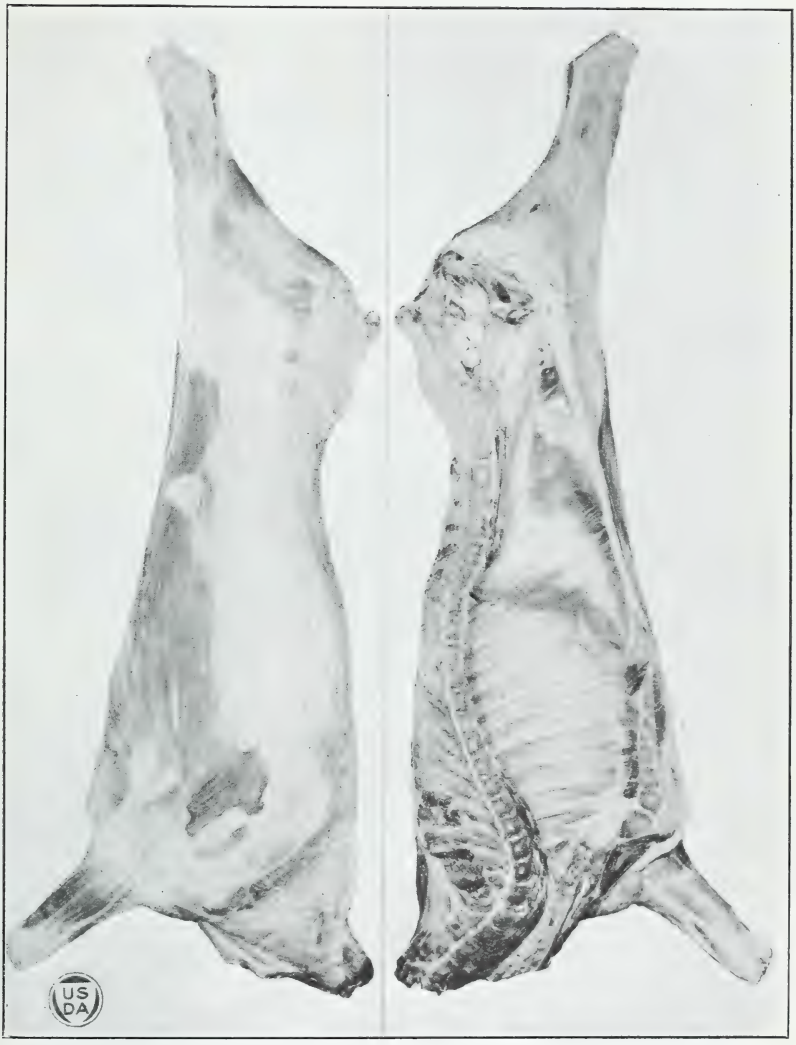
The exterior surface is almost completely covered with smooth, creamy-white fat of moderate thickness and excellent quality. The greatest depth of fat is over the loins and ribs, with only a thin covering over the shanks, neck, shoulders, and lower round. The kidney, crotch, and breast fats are generally more abundant than in steers of the same grade, but are not excessively wasty. They have the same quality and color as those of Choice steer beef. The udder is the point of greatest waste. In all other respects, the Choice heifer resembles the Choice steer, and is equally desirable from the consumer's standpoint. Carcass weights range from 350 to 600 pounds.

No. 2, or Good heifer beef.—No. 2, or Good, heifer beef is above the average of the class in quality, conformation, thickness of flesh, and finish, but is too deficient in one or more of these factors to qualify for Choice grade. The outlines are inclined to be angular, on account of the development of sex characteristics. The carcass is relatively long in proportion to the depth of flesh. The hip and shoulder joints are noticeable, but not prominent. Ribs, loins, and rounds are of good build, but slightly inclined to flatness. The rounds show a virtually straight line from the tail joint to the shank, the shank being inclined to be long and tapering. The chucks and plates usually show slightly greater width in proportion to the length of carcass than do steer cuts of equal grade.

The "eye" of the rib and loin has good breadth and shows some marbling. The flesh is light to medium red in color. The fat covering generally is rough or wavy, but is not excessive, and is inclined to be bunchy over the loins and ribs. The shanks, neck, shoulders, and lower rounds may be thinly covered, or have no covering at all. The kidney, crotch, and breast fats are abundant and usually wasty, and frequently are soft and of slightly yellowish or creamy-white color. The interior walls of the forequarter are rarely entirely covered, while those of the hindquarters are well covered with a thin layer of fat. Carcass weights range from 350 to 550 pounds.

No. 3, or Medium, heifer beef.—No. 3, or Medium, heifer beef, like steer beef of the same grade, represents the average of the class. It has irregular or angular conformation, moderate thickness of flesh, and is of sufficient quality and finish to satisfy the demands of the average consumer. The hip and shoulder joints are prominent, the chucks and plates are relatively large and wide, and are inclined to be rough. The loins and ribs are shallow. The rounds are of average thickness, but are lacking in the fullness and amount of flesh of the better grades. The flanks are relatively thin and light. The neck is long, thin, and tapering. The "eye" of the rib and loin lacks the thickness of the better grades, but has sufficient breadth to satisfy the average retail demand for steaks and roasts from these parts.

The exposed flesh shows no marbling, and lacks the light-red color common to beef of better finish. It is moderately coarse, "stringy," tough, and soft or watery, indicating a lack of concentrated feed. The outside fat covers the ribs, loins, rump, and a small portion of the chucks, but is absent from the lower round, shoulders, shanks, and neck. The interior fats generally are absent from the forequarter, except small amounts of breast fat. There is a small



SIDE OF NO. 4 OR COMMON STEER

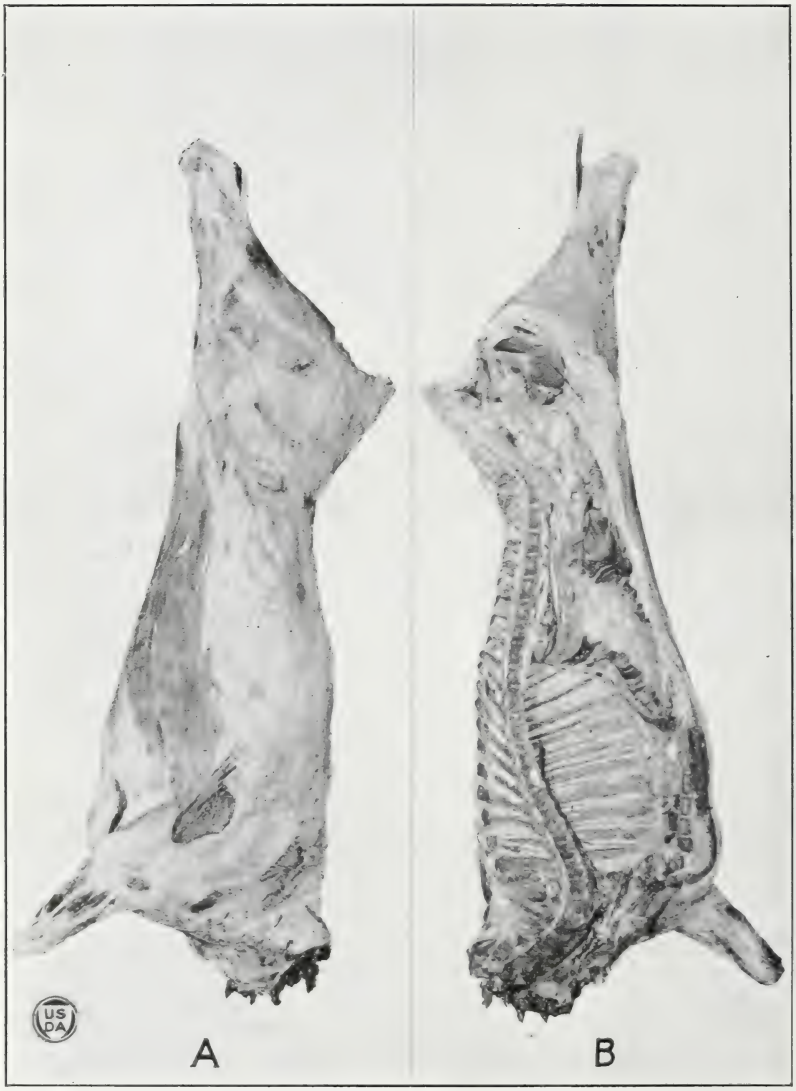
83928°—24——3

NO. A1 OR PRIME HEIFER CARCASS

A, Outside; B, whole carcass; C, inside

CARCASS OF NO. 1 OR CHOICE HEIFER

A, Whole carcass; B, inside



SIDE OF NO. 2 OR GOOD HEIFER

A, Outside; B, inside

amount of kidney and crotch fat of average quality, and this usually has a yellowish tint. This grade is on the market throughout the year, especially in the cities and outlying sections within easy reach of the large packing centers. Carcass weights range between 350 and 550 pounds.

No. 4, or Common, heifer beef.—No. 4, or Common, heifer beef is the lowest grade of this class in which the whole carcass is sold to the retail trade. The grade is composed mostly of carcasses from immature or underfed "long" yearling females. The conformation is decidedly irregular and angular. The hip and shoulder joints are very prominent. The curve in the back is very pronounced. Rounds, shanks, and neck are long and thinly fleshed. The flesh throughout lacks depth and attractiveness, on account of the absence of fat or finish, but very often is surprisingly tender, especially in carcasses from young animals. There is practically no fat on the exterior surface, and very little on the breast and in the crotch, and over the kidneys.

The "eye" of the loin and rib lacks the breadth ordinarily sought by the average trade, and may have the pinkish tint of "split veal," or it may have a dark-red color and a watery appearance. The number of heifer carcasses of this grade is negligible as compared with the total number of carcasses on the market. Carcass weights range from 300 to 450 pounds.

No. 5, or Cutter, heifer beef.—Heifer beef of the Cutter grade is quite similar to that belonging to the corresponding grade in the steer class. It comes from animals so thin and emaciated that, as a rule, only the loins and ribs can be sold in retail cuts. Such beef is decidedly deficient in conformation, quality, and finish. It is not produced with commercial intent, but is an accident of the beef-cattle industry, being the result of drought, neglect, or some other untoward condition. As is true of steer beef of the corresponding grade, Cutter heifer beef is used mostly for sausage or canning. Under normal conditions the supply is negligible.

No. 6, or Canner, heifer beef.—This is the lowest grade of heifer beef recognized by the trade. It includes virtually all heifer carcasses so thin and lacking in flesh and fat that even the loins and ribs can not be dispensed in retail cuts. As the name implies, most beef of this grade is canned, although some is used in sausage.

GRADES OF COW BEEF.

There are six grades of cow beef: No. 1 or Choice, No. 2 or Good, No. 3 or Medium, No. 4 or Common, No. 5 or Cutter, and No. 6 or Canner. There are no Prime cow carcasses.

No. 1, or Choice, cow beef.—No. 1, or Choice, cow beef is rare. It generally comes from an animal of an improved beef type that has not had more than one calf. It compares favorably with Choice heifer beef in quality, but in conformation it is usually more angular. The hips are more prominent, and the exterior and interior fats may be more excessive and wasty. It has excellent depth of flesh, and possesses good finish and quality. The "eye" of the rib and loin is smaller, but otherwise is similar to that of the same grade

of heifers or steers. Aside from the pronounced sex characteristics, the presence of the udder and the absence of the cod fat, and the inclination to carry more fat on the back, rump, and round and on the interior parts, this grade differs but little from that of steer and heifer beef of the same grade. Weights range from 450 pounds up.

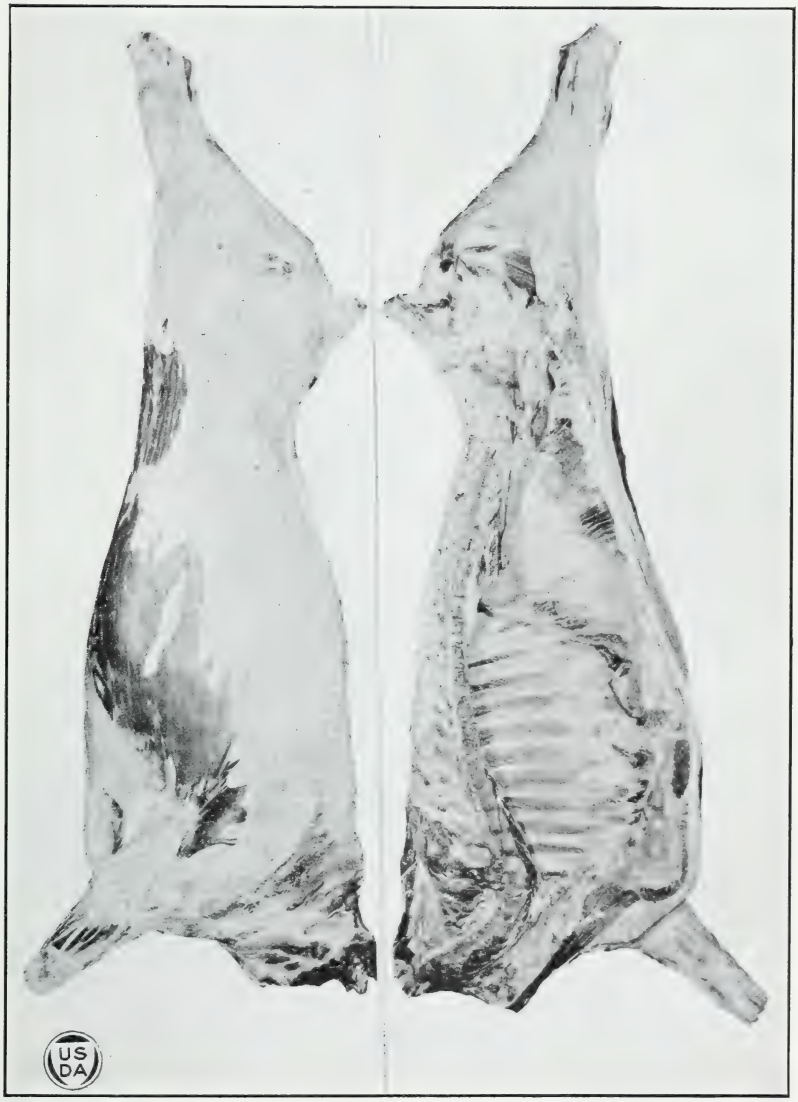
No. 2, or Good, cow beef.—No. 2, or Good, cow beef has good conformation, except for the pronounced curve in the back just forward of the rump. The loins and ribs are relatively thin, and the rounds, while heavy, lack the depth of steer rounds of the same grade. This is especially noticeable near the shanks, which are relatively longer and more tapering than in steer beef. The neck is relatively thin. The "eye" of the loin and rib is above the average of the class in thickness. The flesh is of good color, and has a moderate amount of marbling.

Although a Good cow carcass may carry more fat, the quality is comparable to that of the same grade of steer and heifer beef. The carcass is well covered with fat, except over the neck and foreshanks, and is inclined to be rough, patchy or "gobby" on the ribs, loins, and rump. The interior fats are abundant, especially over the kidney, in the crotch, and on the breast, and they usually have a pronounced yellowish tint, and are of average quality. The interior walls of the hindquarter are especially well covered, but those of the forequarter are not entirely covered. The fat here appears in ruffles or waves along the ribs, leaving the muscular tissues along the bones partly exposed. Such carcasses are on the market throughout the year, but are more abundant from late fall to early spring. Carcass weights range from 425 to 750 pounds.

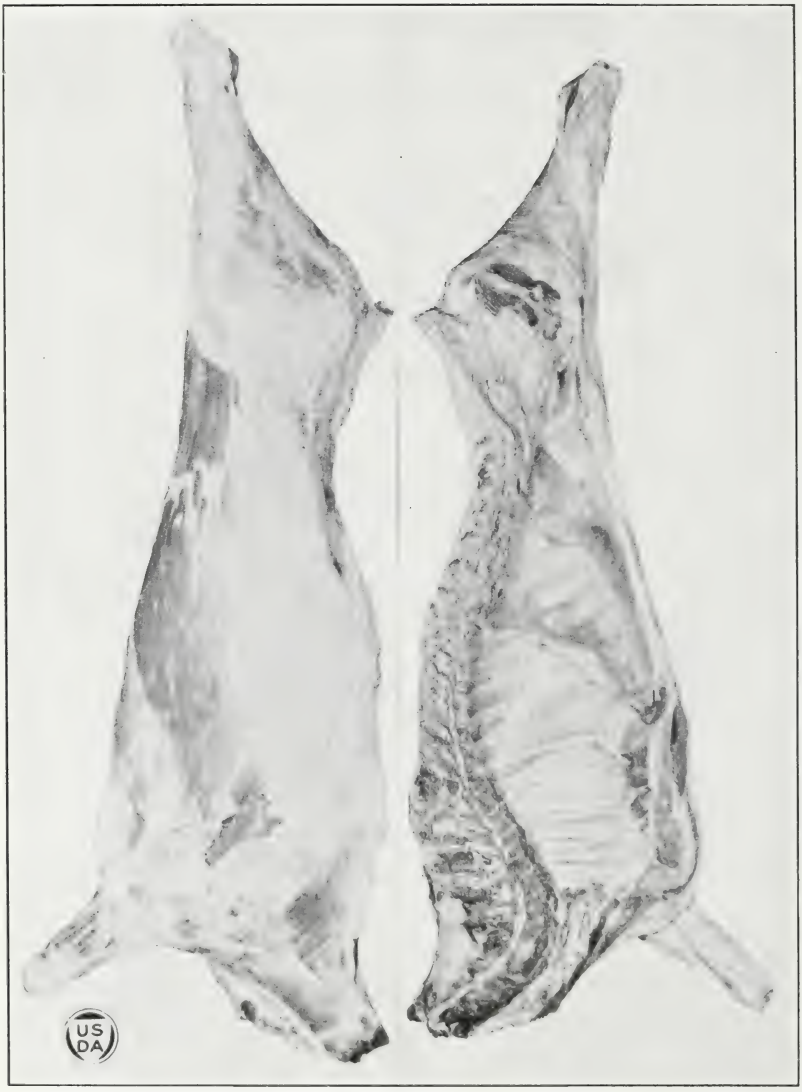
No. 3, or Medium, cow beef.—This grade includes the bulk of cow beef on the market. Such carcasses are very angular, and generally coarse and ungainly. The hip and shoulder joints are prominent. The chucks and plates are relatively thin and wide. Such carcasses are clearly deficient in thickness of flesh, finish, and quality, but fulfill the demands of the average consumer for small steaks and roasts of fair quality. The loins and ribs are flat or sunken. The broad ligament along the backbone is visible. The rounds are thin and flat, and sunken about midway between the tail and hock joints. The shanks and neck are long and thinly fleshed. The bones are hard and gray, except in young cows.

There is a moderate amount of slightly yellow rough fat of low quality over the back, from the chuck to the rump. The plates, flanks, shanks, and neck have little or no fat covering. The interior fats are present in sufficient quantities to show an average degree of finish. The "eye" of the ribs and loins is smaller than in the same grade of steers and heifers. The flesh usually is slightly darker in color and often is coarse in texture and inclined to toughness. The bones usually are prominent, white, and flinty. Weights range from 350 to 550 pounds.

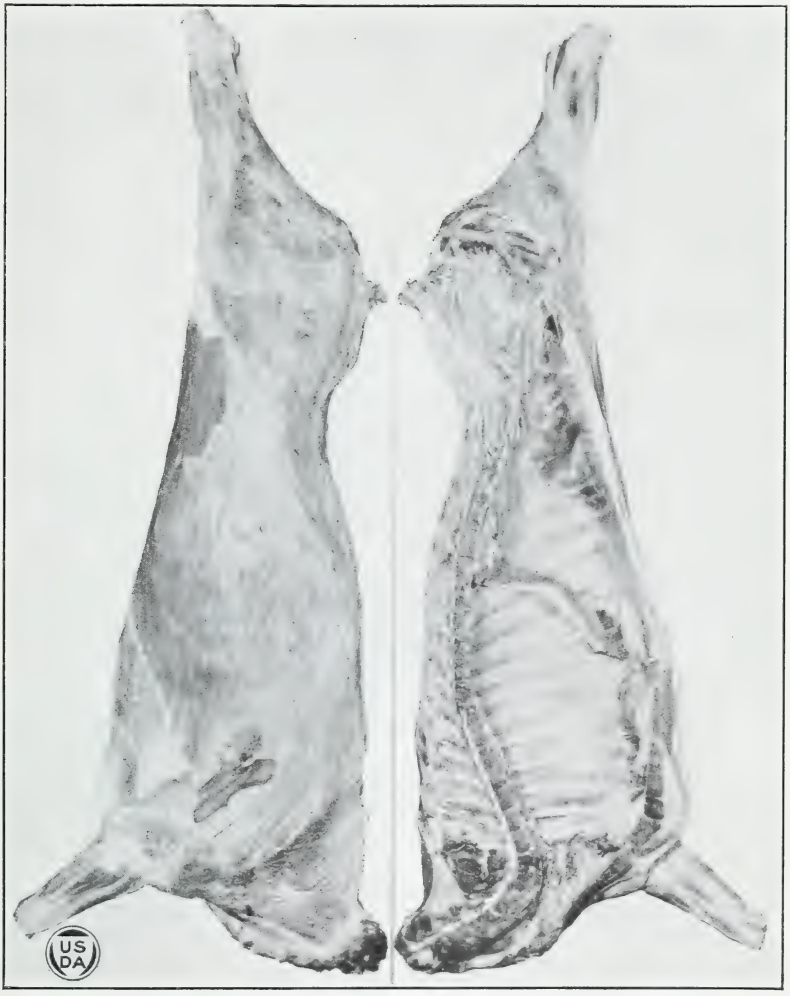
No. 4, or Common, cow beef.—No. 4, or Common, cow beef is decidedly deficient in quality, conformation, thickness of flesh, and finish. It is rough, coarse, and angular. The hip and shoulder joints, ribs, and backbone are prominent. The flesh is thin in all parts, but of sufficient thickness to sell over the butcher's block.



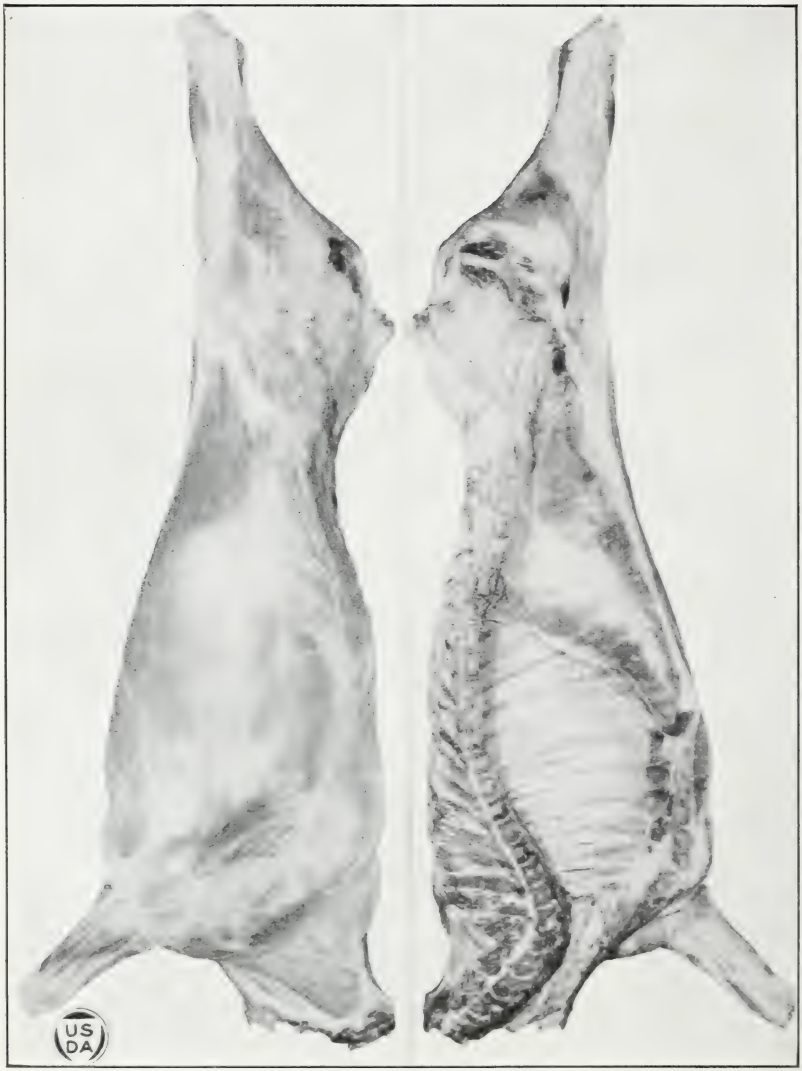
SIDE OF NO. 2 OR GOOD COW



SIDE OF NO. 3 OR MEDIUM COW



SIDE OF NO. 4 OR COMMON COW



SIDE OF NO. 5 OR CUTTER COW

Such carcasses have practically no fat on the exterior and interior surfaces, and the flesh is dark red, tough, "stringy," coarse, and watery. Weights range from 325 to 450 pounds.

No. 5, or Cutter, cow beef.—No. 5, or Cutter, cow beef usually is so deficient in quality, conformation, thickness of flesh, and finish that it is not suitable for block purposes, and is rarely offered to the trade, except in such wholesale cuts as light loins, chucks, and rounds, or in boneless cuts, such as boneless chucks strips, and rolls, which are used chiefly by the restaurant and hotel trade. Some Cutter carcasses compare favorably with those of the Common grade, especially those having relatively thick loins and ribs. They are, however, markedly deficient in thickness of flesh in all other parts and have very little fat. The flesh is coarse, dark, and usually tough.

No. 6, or Canner, cow beef.—No. 6, or Canner, cow beef is the lowest grade of cow beef, and is extremely thin in all parts, and very irregular in conformation. All bones are very prominent, and the angularity is further emphasized by an extreme lack of finish. Carcasses of this grade come almost exclusively from worn-out dairy and breeding stock, and are entirely devoid of fat, except in carcasses that approach the Cutter grade. Because of the absence of fat, the carcasses usually have a blue or very dark appearance. The flesh is coarse, dark, soft, and watery. It rarely is offered to the trade fresh, except in boneless strips, rolls, and chucks, being used principally for canning and sausage.

GRADES OF BULL BEEF.

There are six grades of bull beef: No. 1 or Choice, No. 2 or Good, No. 3 or Medium, No. 4 or Common, No. 5 or Cutter, and No. 6 or Canner.[7]

No. 1, or Choice, bull beef.—No. 1, or Choice, bull beef has the excellent conformation and depth of flesh characteristic of the superior beef type. The rounds, chucks, and neck are thick, or overdeveloped, and are very heavily muscled. The loins and ribs are broad, but tend to shallowness and are relatively small in proportion to the rest of the carcass. The exterior surface is well covered, but the fat, although rough, is not gobby or excessively deep at any point. The interior fats are plentiful, but lack the quality and brittleness of that of a Choice steer. Usually, such carcasses are from young, well-fed bulls, although older bulls sometimes produce this grade. The flesh generally is of a medium dark-red color, but is superior in quality to the average of the class. The "eye" of the loin and rib shows no marbling, but is firm and comparatively dry. Bull beef rarely shows marbling. Carcasses of this grade are in no way comparable to those of choice steers, heifers, or cows, chiefly because they are markedly deficient in quality and finish. The flesh is darker, tougher, and lacks fat deposits along the muscle fibers. The percentage of Choice bulls is practically negligible. A carcass of this grade is found occasionally, but not frequently. The few that reach the market are used almost exclusively by retailers catering to a trade demanding low-priced meats.

[7] No. 3, or Medium, bull carcasses and No. 4, or Common, bull carcasses are frequently referred to by the trade as "Bolognas."

No. 2, or Good, bull beef.—No. 2, or Good, bull beef usually is from an animal of the best type, but lacks the superior finish of the Choice grade. Well-fed, inactive, heavy, dairy-type animals, and cross-breds, contribute a fair percentage of carcasses to this grade. The exterior surfaces, especially of carcasses from beef-type bulls, are covered with a rough but relatively thin fat, and the interior fats are of sufficient quantity to indicate more than an average finish. The finish may be similar to that of the Choice grade, but the carcass may be lacking in conformation and depth of flesh. The rounds, chucks, and necks are large and massive. Ribs and loins are relatively small, and inclined to be thin. The carcass is long, and the outlines rough and irregular. This is the lowest grade of bull carcasses that is sold over the butcher's block. Such carcasses generally are from young bulls, but a few aged bulls are found in this grade.

No. 3, or Medium, bull beef.—No. 3, or Medium, bull beef is of average conformation and depth of flesh for this class, but has a scant supply of fat over the kidneys and in the crotch, and none on the inner surface of the ribs. The flesh is dark, tough, and relatively dry, and is especially adapted to the needs of the sausage trade, because of its ability to absorb water. Such carcasses generally are known as "Bologna" carcasses, and often are referred to as "Choice Bologna bulls." The flesh of the rounds is converted chiefly into beef-ham sets for the dried-beef trade. Dairy-type and inferior beef-type bulls comprise the bulk of this grade. Such carcasses are rarely sold over the block.

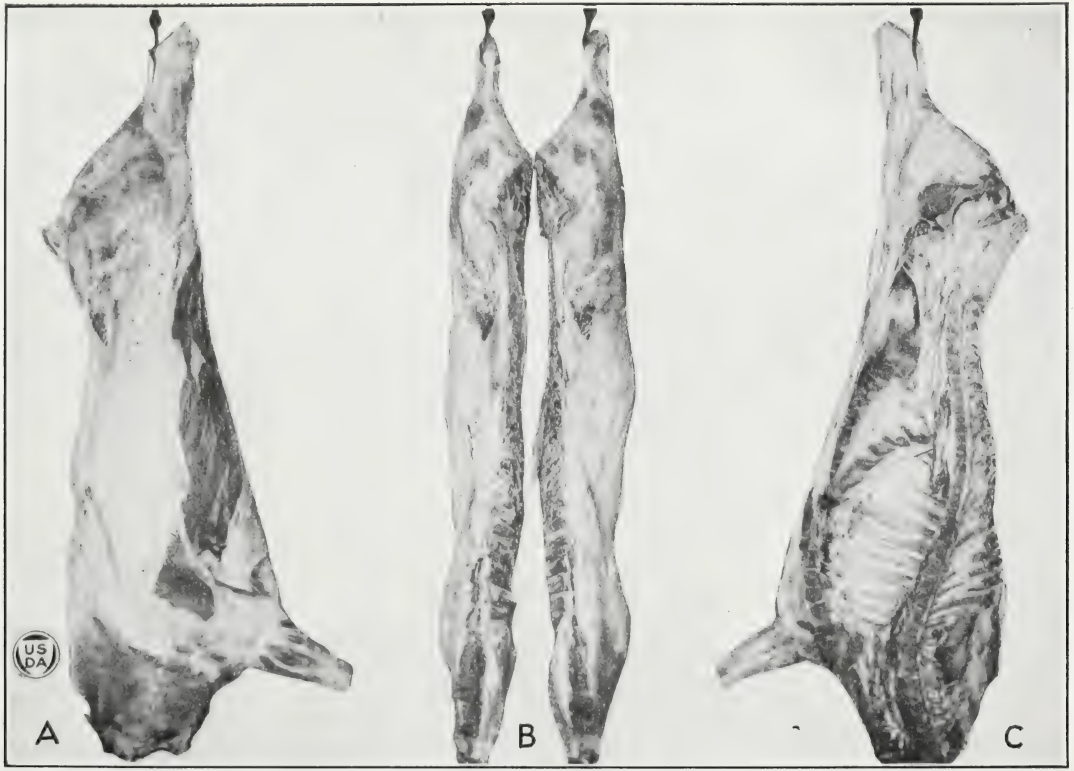
No. 4, or Common, bull beef.—Carcasses of No. 4, or Common, bull beef, although fairly well developed in the rounds, chucks, and neck, lack the conformation and depth of flesh of the better grades. They are rough, coarse, angular, and have no fat deposits on the interior or exterior surfaces. The flesh is dark, tough, and "stringy." Carcasses of this grade also are known as "Bologna" bulls, and find a ready market for sausage and cured-beef purposes, but are not suitable for retail fresh-meat trade.

No. 5, or Cutter, and No. 6, or Canner, bull beef.—In ordinary market experience, there is very little bull beef that falls below the Common grade. During periods of extreme drought, however, a few bulls usually come to market which are so emaciated that they do not produce beef which could even be graded as Common. Furthermore, in certain sections of the country, where cattle husbandry is extremely backward and where beef animals are given little or no care, but are allowed to roam the woods and revert almost to their original wild state, inbreeding and lack of care sometimes produce bulls which are so small and misshapen that the beef from them can be graded only as Canner or Cutter bull beef. In this connection, the term "Cutter" is somewhat of a misnomer, although in certain sections such carcasses are cut up and retailed to an undiscriminating trade.

Such beef possesses the low degree of conformation, finish, and quality which characterizes the Canner and Cutter grades in other classes, but in each case emphasized by the peculiarities which render bull beef the least desirable of all classes of beef.

CARCASS OF NO. 2 OR GOOD BULL

A, Outside; B, whole carcass; C, inside

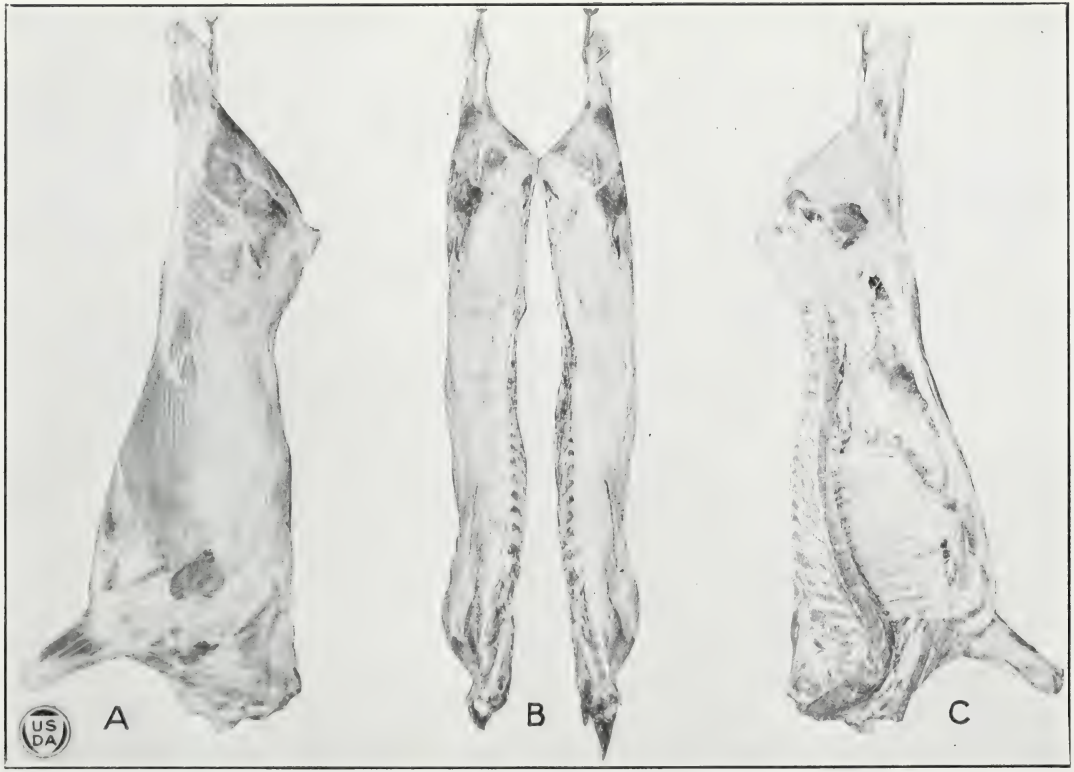


CARCASS OF NO. 4 OR COMMON BULL

A, Outside; B, whole carcass; C, inside

CARCASS OF NO. 2 OR GOOD STAG

A, Outside; B, whole carcass; C, inside



CARCASS OF NO. 4 OR COMMON STAG

A, Outside; B, whole carcass; C, inside

GRADES OF STAG BEEF.

There are six grades of stag beef: No. 1 or Choice, No. 2 or Good, No. 3 or Medium, No. 4 or Common, No. 5 or Cutter, and No. 6 or Canner.

There are fewer stags than bulls, and they are graded by virtually the same standard. Young stags are more desirable than older ones, and their carcasses often can not readily be distinguished from those of steers. Much depends on the age at which the animal was castrated. If that occurred shortly after the animal reached sexual maturity, the beef may make a very close approach, in most respects, to steer beef. If, however, castration was delayed until the animal had attained full maturity, and, possibly, had been used for breeding purposes, the beef will have virtually all of the important and outstanding characteristics of bull beef.

No. 1, or Choice, stag beef.—No. 1, or Choice, stag beef usually has brighter and more tender flesh than bull beef, with an appreciable infilling of fat along the muscle fibers not noticeable in bull beef, but it has very little, if any, marbling. In quality and finish Choice stag beef surpasses Choice bull beef. The fat covering, while somewhat rough, is well distributed over the exterior surfaces. The interior fats, while not excessive, are abundant and well-distributed and of slightly better quality than in Choice bull beef. They are, however, inferior in quality to that of a steer, heifer, or cow carcass of the same grade.

No. 2, or Good, stag beef.—No. 2, or Good, stag beef resembles No. 2, or Good, bull beef in nearly every respect, except that it has slightly better finish and quality and the flesh is brighter and more tender. Otherwise there is not enough difference to warrant describing the grade in detail.

No. 3, or Medium, stag beef.—No. 3, or Medium, stag beef also resembles bull beef of the same grade in nearly every respect. The flesh, though dark and tough, is brighter and slightly more tender and for that reason is superior to that of Medium bull beef. This grade is used freely by retail meat dealers catering to a trade requiring a cheap grade of beef. Such carcasses also are used in sausage.

No. 4, or Common, stag beef.—No. 4, or Common, stag beef resembles Common bull beef in conformation and depth of flesh. Like Common bull beef, it rarely shows much finish or quality. The flesh is dark and inclined to be more watery than that of bull beef of the same grade. Otherwise, there is no appreciable difference between the two classes with reference to this grade.

No. 5, or Cutter, and No. 6, or Canner, stag beef.—Theoretically, there is nothing to prevent the existence of Cutter and Canner stag beef, but such an article is practically unknown to the market. The reason for this is that in order to produce stag beef, castration must be performed after maturity. When this is done, it is with a view to putting the animal in market condition. Whenever a real effort to do this is made, the resulting carcass rarely grades lower than Common. In the rare instances where stag beef grading lower than Common is offered, it possesses virtually the same characteristics and deficiencies as Cutter or Canner bull beef and is graded accordingly.

STANDARD WHOLESALE CUTS OF BEEF.

All beef carcasses are divided, or split, into sides of nearly equal weight, as a part of the dressing operation, and are sent to the refrigerating rooms, which are known as "chill" rooms, "boxes," or "coolers." The right side of the carcass is known as the "closed side," because the suet around the kidney is firmly and snugly attached to the inner curvature of the loin near the backbone and can not be removed without danger of injuring the tenderloin [8] or "fillet." The left side is called the "open side" because the ball, or lower end, of the kidney knob [9] hangs free and can be removed easily with a knife. The "open" side is about 1 per cent heavier than the "closed" side.

As a part of the dressing operations, after carcasses are split into sides, a sawtooth instrument, or "scribe," is drawn heavily across the chine bones, which saws them partly through. The bones are then cracked by driving the ends backward. The operation tends to broaden the "eye" of the rib, and adds to convenience in handling the carcass. This is known as "scribing."

Comparatively few carcasses are offered to the trade in the side, most of them being divided into "fores" and "hinds," or forequarters and hindquarters. This quartering act is known as "ribbing," because the line of severance is determined by the ribs. Methods of quartering differ according to local trade customs, the number of ribs left on the hindquarter varying from none to five.

The so-called "Chicago method," which is the most prevalent, leaves one rib on the hindquarter. One or more ribs on the hindquarter serve to hold the flank distended, give the hind a full or rounded appearance in the region of the flank, and facilitate the circulation of air over the inner walls.

The method of "breaking up" or subdividing the quarters into wholesale cuts of primary parts also differs according to local trade customs. Variations often are so great that no comparison can be made satisfactorily with reference to relative yields, values, or prices, of either the wholesale cuts or the retail cuts derived from them. For instance, the flank is left on the round in some cities, on the loin in others, and is entirely removed in others. Other variations are frequent. Many of them are apparent in the tables which follow on pages 31 and 32 showing the percentage relation of the primary parts to the carcass according to the methods of cutting in certain cities where tests were made. The Western, or Chicago, method of cutting is more generally used than any other, and therefore in the following discussion that method of cutting is understood unless otherwise specified.

In the Chicago method, sides are quartered in such a way as to leave about 48 per cent of the weight in the hindquarter and 52 per cent in the forequarter. The loin, round, rump, shank, and flank are obtained from the hindquarter, whereas the rib, chuck, plate, brisket, and foreshank or shin come from the forequarter. Some of these cuts, especially the loin and the chuck, often are further subdivided. Among the cuts of local significance, particularly in eastern markets, are "cross cuts" (chuck, brisket, and shin), rattles

[8] Tenderloin should not be confused with the coarse muscle of the diaphragm often left hanging in the carcass and generally referred to as "the hanging tender."

[9] The kidney with its surrounding fat, or suet, is known as the "kidney knob."

BEEF CHART

WHOLESALE AND RETAIL CUTS

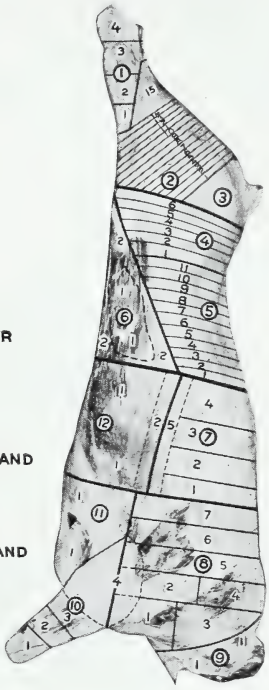
① HIND SHANK
1 TO 3 SOUP BONES
4-KNUCKLE

⑥ FLANK
1-FLANK STEAK
2-STEWS OR HAMBURGER

⑫ PLATE
1-STEWS OR BONED AND ROLLED ROASTS
2-SHORT RIBS

⑪ BRISKET
1-STEWS OR BONED AND ROLLED ROASTS

⑩ FORE SHANK
1 TO 3 SOUP BONES
4-SHOULDER CLOD



② ROUND
1 TO 14 ROUND STEAKS
15 HEEL OF ROUND

③ RUMP
STEAKS OR ROASTS

④ LOIN END
1 TO 6 SIRLOIN STEAKS

⑤ SHORT LOIN
1 TO 3 CLUB OR DELMONICO STEAKS
4 TO 11 PORTERHOUSE STEAKS

⑦ RIB
1 TO 4 RIB ROASTS
5 SHORT RIBS

⑧ TRIMMED CHUCK
1 & 2 BOTTOM CHUCK ROASTS
3 & 4 TOP CHUCK ROASTS
5 TO 7 CHUCK RIB ROASTS

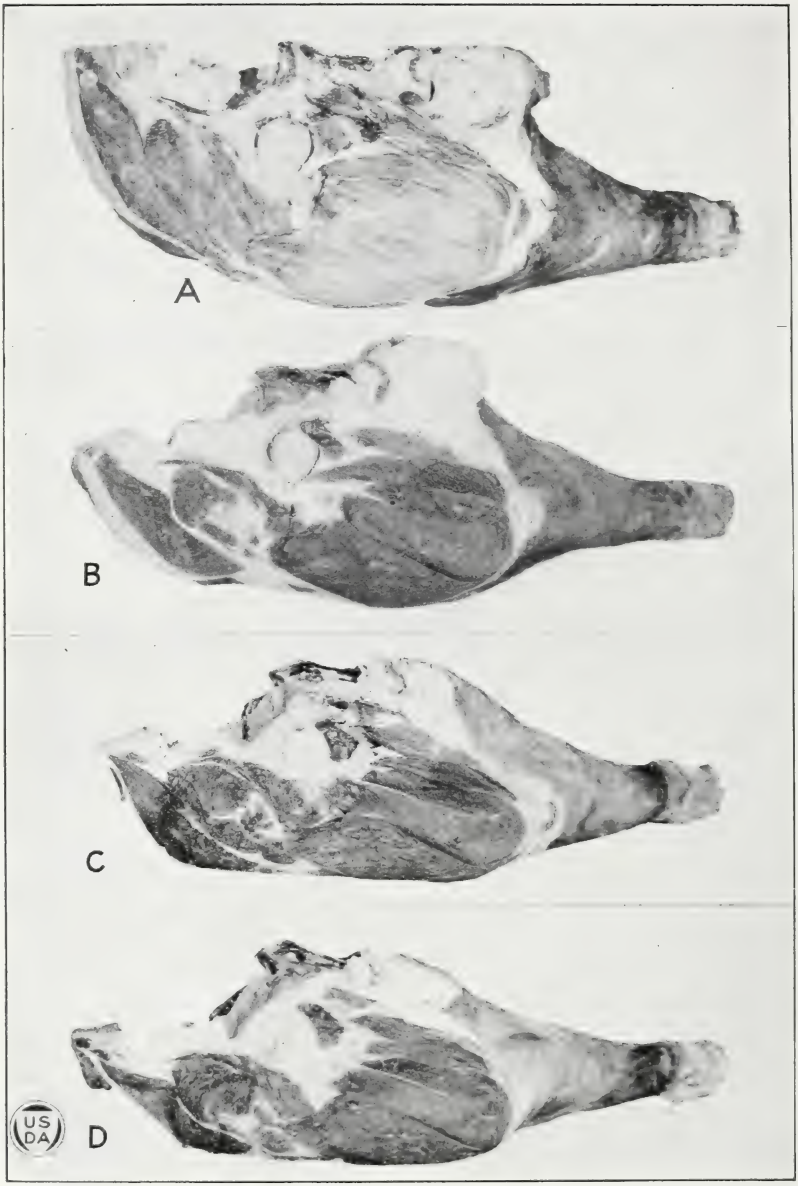
⑨ NECK
1-BONELESS ROASTS
STEWS OR HAMBURGER

Numerals in circles ○ refer to wholesale cuts and major subdivisions of such cuts. Other numerals refer to retail cuts

WHOLESALE CUTS AND SUBDIVISIONS
ALL PERCENTAGES BASED ON CARCASS WEIGHT

①TO⑥ HINDQUARTER	48.0%	⑦ TO ⑫ FOREQUARTER	52.0%
①TO③ ROUND AND RUMP	24.0	⑦ RIB	9.5
① HIND SHANK	4.0%	⑧ & ⑨ CHUCK	22.0
② BUTTOCK	15.0	⑧ TRIMMED CHUCK	17.0%
③ RUMP	5.0	⑨ NECK	5.0
④ & ⑤ FULL LOIN	20.5	⑩ FORE SHANK	5.5
④ LOIN END	7.0	⑪ BRISKET	6.5
⑤ SHORT LOIN	13.5	⑫ PLATE	8.5
⑥ FLANK	3.5		

SIDE OF BEEF MARKED TO SHOW WHOLESALE CUTS



STEER ROUNDS

A, No. 1 or choice steer round; B, No. 2 or good steer round; C, No. 3 or medium steer round; D, No. 4 or common steer round

or triangles (chuck, plate, brisket, and shin), and backs (chucks and ribs). In Boston, the rattle includes only the plate, brisket, and shin. Such terms of local significance generally are confusing to the trade in other localities where the peculiar significance given those terms is unknown, and render price comparisons impracticable.

PERCENTAGE YIELDS OF WHOLESALE CUTS.

The relation of the wholesale cuts to the side, expressed in percentage, varies with the method of cutting. The class and grade of the carcass also affect these percentages. They vary also, to some extent, with the shifting of values for the various cuts and with the desire of the wholesale dealer to get the "high dollar" out of his beef.

Information in Table 1 applies only to No. 2, or Good, grade beef in the markets named. In the lower grades the yields of the forequarter cuts usually are relatively higher, and those of the hindquarter relatively lower, than those shown in the tables. This is accounted for largely by the smaller amount of flesh in the preferred cuts of the hindquarter, and a relatively greater development of the forequarter, which are characteristic of the inferior grades of beef.

TABLE 1.—*Approximate percentage of total weight of No. 2, or Good, grade steer carcasses represented by each wholesale cut under different methods of cutting.*

CHICAGO, ILL.

	Per cent.
Hindquarters (1 rib)	48.00
Forequarters (12 ribs)	52.00
	100.00
Rounds and rumps	24.09
Loins	16.50
Flanks	3.53
Suet (including kidney)	3.88
Ribs	9.64
Chucks (square cut)	22.15
Plates	8.46
Briskets	6.00
Shanks (fore)	5.75
	100.00

NEW YORK, N. Y.

	Per cent.
Hindquarters (1 rib)	48.00
Forequarters (12 ribs)	52.00
	100.00
Rounds and rumps	23.00
Loins	16.00
Kidneys (including suet)	3.50
Flanks	5.50
Ribs	9.60
Chucks (including brisket and shank)	33.70
Plates	8.70
	100.00

BOSTON, MASS.

	Per cent.
Hindquarters (3 ribs)	51.12
Forequarters (10 ribs)	48.88
	100.00
Rounds (including flank)	23.05
Rumps	11.14
Loins (including kidney and suet)	15.26
Cod fats	1.67
Ribs	6.23
Rattles (including plate, brisket, and shank)	24.50
Chucks	18.15
	100.00

PHILADELPHIA, PA.

	Per cent.
Hindquarters (no ribs)	46.00
Forequarters (13 ribs)	54.00
	100.00
Rounds and rumps (including flanks)	34.00
Loins (including kidney and suet)	12.00
Ribs	10.00
Chucks (including shanks)	30.00
Briskets	4.00
Plates	10.00
	100.00

TABLE 1.—*Approximate percentage of total weight of No. 2, etc.*—Continued.

PITTSBURGH, PA.

	Per cent.
Hindquarters (no ribs)	47.00
Forequarters (13 ribs)	53.00
	100.00
Rounds and rumps (including flank)	27.00
Loins (including kidney and suet)	20.00
Ribs	10.00
Chucks (cross cut, including brisket and shank)	30.00
Plates	13.00
	100.00

SAN FRANCISCO, CALIF.

	Per cent.
Hindquarters (no ribs)	47.00
Forequarters (13 ribs)	53.00
	100.00
Rounds and rumps	24.00
Loins	17.00
Flanks (including kidney and suet)	6.00
Ribs	13.00
Triangles (including chuck, plate, brisket, and shank)	40.00
	100.00

SEATTLE, WASH.

	Per cent.
Hindquarters (1 rib)	48.00
Forequarters (12 ribs)	52.00
	100.00
Rounds and rumps	24.00
Loins (including kidney and suet)	24.00
Chucks (including brisket and shank)	35.00
Ribs	10.00
Plates	7.00
	100.00

WASHINGTON, D. C.

	Per cent.
Hindquarters (no ribs)	46.00
Forequarters (13 ribs)	54.00
	100.00
Rounds and rumps	23.00
Loins (including flank, kidney, and suet)	23.00
Ribs	10.00
Chucks	23.00
Plates	7.00
Briskets	7.00
Shanks	7.00
	100.00

LOS ANGELES, CALIF.

	Per cent.
Hindquarters (1 rib)	48.00
Forequarters (12 ribs)	52.00
	100.00
Rounds and rumps	21.74
Loins	20.85
Flanks	3.25
Kidneys	.39
Suet	1.59
Hanging tender	.33
Triangles (including chuck, plate, brisket, and shank)	38.50
Ribs	13.35
	100.00

The foregoing table shows striking variations in the yield of wholesale cuts from hindquarters and forequarters in different markets. Other variations exist in other cities, and often there are similar variations in the same market. It is apparent that there is almost as much need for standardized methods of cutting carcass beef as for standardized market classes and grades. This need is especially emphasized when an effort is made to compare quotations on a given cut in one market with those of a similarly named cut in other markets.

Table 2 shows the extreme ranges of percentage yield of the various wholesale cuts of beef under the Chicago system of cutting, all based on carcass weight. It also shows average percentage yields for each cut. The variations shown in this table are due partly to the fact that even in the same general method of cutting there are bound to be slight variations in the exact point at which the knife is applied. Cutting up carcasses is hand work, and can not be done exactly the same in every carcass. Variations in yields are partly due also to differences between the various classes, and, probably, also to differences between grades.

TABLE 2.—*Percentage relations of wholesale beef cuts to the carcass.*

	Loins.	Ribs.	Rounds.	Chucks.	Plates.	Flanks.	Shanks.	Suet.
Extreme range	15–19	8–11	20–26	21–27	12–16	2–5	3–7	2–7
Conventional average	17	9	23	23	13	4	4	4

STANDARD GRADES OF BEEF CUTS.

Although the absence of standard classes and grades for beef carcasses has been a source of confusion to the trade and to others interested, there is still further complication when the carcass is divided into the customary wholesale cuts. Apparently following along lines of least resistance, many in the trade have adopted numbers to designate the grade of cuts, as No. 1, No. 2, and No. 3, of loins, ribs, rounds, chucks, and plates, the class name usually being inserted between the numeral and the name of the cut, as No. 1 steer round, etc. Unfortunately weight has, as a rule, been the dominant factor in determining such grades, as will be seen by an inspection of Table 3.

TABLE 3.—*Average weights of straight beef cuts (pounds).*[1]

	Loins.	Ribs.	Rounds.	Chucks.	Plates.	Flanks.	Shanks.
No. 1	50–85	30–50	75–110	75–110	40–80	15–20	10–20
No. 2	40–60	25–35	60– 80	60– 80	30–50	10–15	5–10
No. 3	25–40	20–25	40– 60	40– 60	20–35	.....	.....
Strippers	20–30	15–20	30– 40	30– 40	15. 20	.....	.....

[1] Hall, Louis D., Market Classes and Grades of Meat, Illinois Agricultural Experiment Station, Bulletin 147, p. 193.

Apparently in this scheme of grading the heavier-weight cuts are accepted as the best without regard to quality, finish, and conformation. This system penalizes the light-weight cuts from well-finished yearlings and 2-year-olds and baby beeves which now are very common on the market, while the same cuts from rough, rangy, matured steers and cows of inferior quality are ranked above them in grade.

Just as the class of the live animal determines the class of its carcass, so the class of the wholesale cut of beef is the same as that of the carcass from which it is cut. A loin of beef, therefore, is referred to as a steer, heifer, cow, stag, or bull loin, according to the class of the carcass.

Furthermore, the grade of a wholesale cut of beef is the same as that of the carcass from which it is taken. For example, a loin of beef from a steer carcass is No. A 1 or Prime, No. 1 or Choice, No. 2 or Good, No. 3 or Medium, No. 4 or Common, or No. 5 or Cutter, according to the grade of steer carcass from which it came. No. 6 or Canner is not sold in wholesale cuts.

The grades of wholesale cuts thus established are more numerous than those commonly used by the trade. (See page 47.) There would seem, however, to be little logic in dividing carcass beef into six or seven grades and then dumping all wholesale cuts derived from such carcasses into three or four grades. Obviously, the grade of a given piece of meat is not changed by reducing the carcass or side to wholesale, or even retail, cuts.

Both carcasses and cuts are graded on the basis of conformation, finish, and quality, but in the case of carcasses the degree of quality, finish, and conformation must be determined almost entirely by mere observation of the surfaces of the carcass or sides, whereas in wholesale cuts the cut surface of the meat frequently reveals evidences which were not apparent in the whole carcass or side. Among such evidences color, texture, grain, marbling, and the relative proportions of flesh, fat, and bone may be named. For this reason it is possible to grade cuts with greater exactness than carcasses.

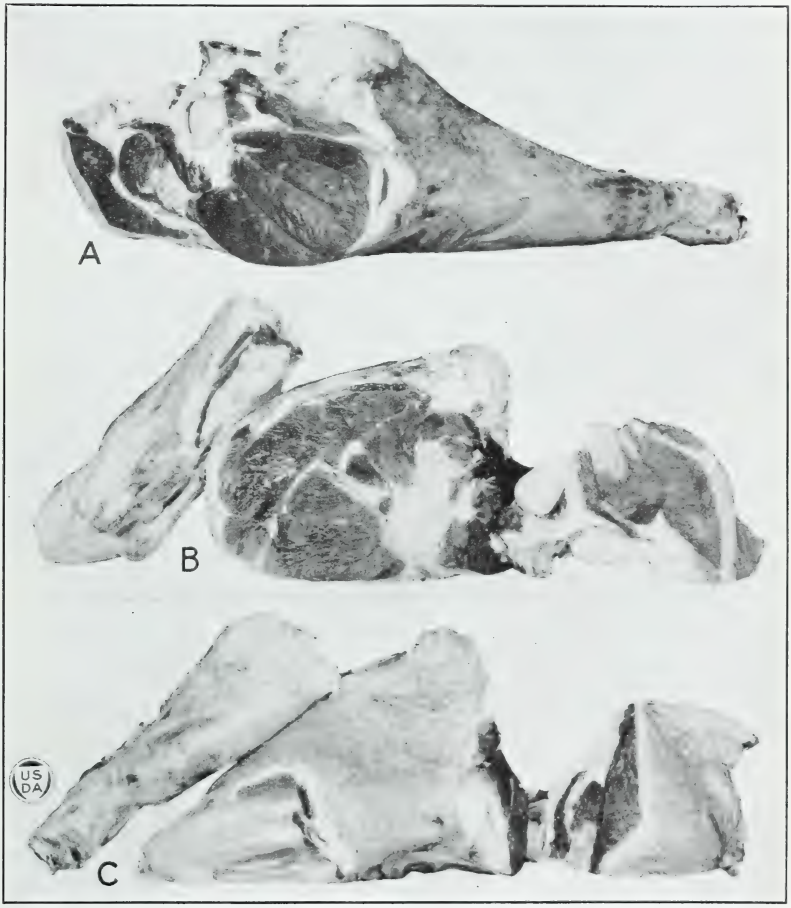
A dark flesh, for example, generally indicates poor quality, absence of finish, advanced age, or an overheated or feverish condition or incomplete bleeding at time of slaughter. It is also probable that feeding of miscellaneous feeds, such as bread and kitchen and garden waste, produce a similar condition in the flesh. All grades of beef, however, will become darker when exposed for a brief interval to warm air, or for a longer period in coolers. Correct judgments, however, may be formed under any temperature at the time a cut is made.

It is impracticable to discuss the grades of wholesale cuts by classes, as was done in the case of carcasses. There is striking similarity in quality and finish between the correponding grades of cuts from steers, heifers, and cows. There are important differences in conformation and depth of flesh, however. Any striking differences due to class characteristics are indicated under the description of each grade. It should also be added that the following descriptions of grades of wholesale beef cuts apply only to steer, heifer, and cow beef. Bull beef and stag beef of the lower grades are not commonly sold over the butcher's block.

GRADES OF BEEF ROUNDS.

Under the Chicago method of cutting, a beef round represents about 24 per cent of the side, and includes the round or buttock, rump, and shank. The buttock is the round proper, and is especially economical for the average consumer because of the large amount of lean meat and the relatively small percentage of fat and bone. The boned rump and "heel," or lower part of the round, are excellent for roasts.

As in other wholesale cuts, the class and grade of a round are determined by the class and grade of the carcass from which it



STEER ROUND AND SUBDIVISIONS

A, Steer round (complete); B, shank (left), round (middle), rump (right), inside view; C, shank (left), round (middle), rump (right), outside view

STEER AND COW ROUNDS

A, No. 2 or good steer round; B, No. 2 or good cow round; C, No. 3 or medium steer round; D, No. 3 or medium cow round

comes. The following, from Bulletin 147 [10] of the Illinois Agricultural Experiment Station, describes ways of determining the class of a round under certain circumstances. "Rough or lumpy cod fat indicates a steer round; a soft, flabby bag, a cow round; and a firm or hard bag, a heifer round." In cow carcasses the udder is frequently removed, but when the udder is absent the underlying tissue is rather loose and porous as distinguished from the firm fat of a steer carcass. Heifer udders are almost never removed. In some markets (notably at Boston) the cod fat is removed from the round with the flank. When that is done, the class must be determined by considering other factors, such as conformation, finish, and general quality. It may be added that in steer rounds the posterior end of the aitch bone is surrounded by the lean flesh of the "inside" of the round, whereas in cows and heifers it is surrounded by fat.

The varying shapes of rounds, due to the different types of animals, bear a close relation to the grades. Also, the cut surface of the round, next to the loin from which it was separated, provides an excellent index to the grade. Except in the region of the rump or upper part of the round, over the "inside," and between the muscle seams, there is very little fat in the round.

No. A 1, or Prime, beef rounds.—No. A 1, or Prime, beef rounds have excellent depth of flesh in all parts. In this respect they are far above the average. Such rounds are obtained only from animals of superior beef type that have been specially fattened and finished. Prime rounds appear short and compact, because of their thick, heavy muscles. There is no marked difference in length as compared with other grades. The muscles of the buttock, variously referred to as "outside" or "thigh," and "inside" or "twist," are especially well developed. As in all rounds, the "inside" has more thickness, and is somewhat more tender and is therefore more desirable for steaks than the "outside."

The round is covered with fat varying from one-half to three-fourths inch thick at the point of severence from the loin, gradually becoming thinner toward the shank. The depth of the fat on the rump and the upper portions of the "inside" often exceeds $1\frac{1}{4}$ inches. This is especially true of heifer rounds.

Marbling is present in the rump and upper portion of a prime round, but disappears in the heavy muscles. The seam, or intermuscular fat, is abundant. All fats have creamy or white color, and are brittle, indicating a grain finish. The flesh is of light or cherry-red color in the rump and upper portion of the round, but is slightly darker toward the shank, because of the greater amount of exercise given these muscles by the animal. The flesh of the "inside" is especially attractive and tender, and is only slightly inferior in this respect to a prime rib. The "outside" is tougher than the "inside," but not to a marked degree.

No. 1, or Choice, beef round.—No. 1, or Choice, beef rounds do not differ materially from prime rounds in depth of flesh. They may be more wasty, especially in the region of the cod in a steer, or the udder in a heifer or cow, or they may be slightly deficient in fat covering and intermuscular fat. The flesh generally is of a

[10] Hall, Louis D. Market Classes and Grades of Meat. Illinois Agricultural Experiment Station Bulletin 147, p. 199.

light-red color, but may be slightly darker. The fiber may be somewhat coarser than in a prime round. Generally, there is no striking difference between the two grades of rounds in outward appearance, except that some Choice rounds may not have any fat covering on the shanks and lower portion of the "outside."

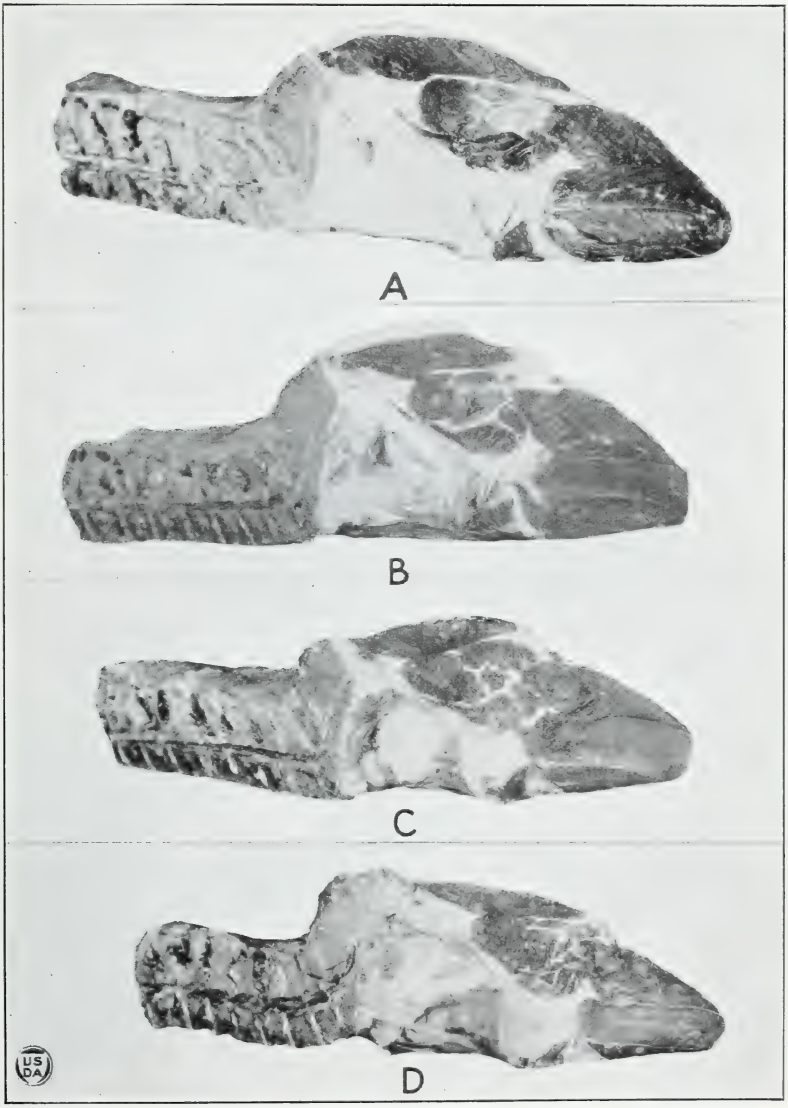
No. 2, or Good, beef rounds.—No. 2, or Good, beef rounds are above the average in depth of flesh and fat covering of the exterior surfaces, but are inferior in these respects to Choice and Prime rounds, usually because of a smaller amount of flesh. They seem longer than Choice or Prime rounds, but are fairly compact and meaty. The shanks are relatively long and tapering, and usually have no fat covering.

The depth of the fat on the rump and upper round varies from one-half to 1 inch, and even more, especially in cow rounds. The fat covering of the latter often is excessive and wasty over the "inside" and on the rump and upper round. As a rule, Good steer and heifer rounds are somewhat deficient in internal and external fat covering, and also intermuscular fat, as compared with Choice rounds, but show evidence of grain-finish. The flesh is firm, but may be slightly dark and inclined to coarseness, except in rounds from animals of the yearling and short 2-year-old classes.

No. 3, or Medium, beef rounds.—No. 3, or Medium, beef rounds possess average depth of flesh and appear long and slightly flat. There is a moderate covering of fat over the rump and upper part of the round and on the "inside," which rapidly disappears over the buttock and toward the shank. The cod, or udder, fats are scant, and there is only a small deposit of intermuscular fat, but enough to make the steak palatable. The muscles have a dark-red color, are slightly watery, coarse, and generally tough. When cut they do not remain in their natural positions, but the ends protrude and appear moist. Medium cow rounds have considerably more fat than steer and heifer rounds of this grade, but their irregular conformation and lack of quality counterbalance the finish.

No. 4, or Common, beef rounds.—No. 4, or Common, beef rounds are long, flat, or dished, and below the average in depth of flesh. They have scarcely any fat covering or intermuscular, cod, or udder fat. Even Common cow rounds are deficient in this respect. There is a scant covering of fat on the rump and a portion of the upper round and on the "inside," but the absence of fat on the remaining surfaces gives the cut a dark and unattractive appearance. The shanks are long and tapering, and the "heel" of the round is very light. The flesh is tough, dark, and watery, and the muscles will not remain set in their natural positions. These rounds find an outlet in the trade demanding cheap steaks and roasts.

No. 5, or Cutter, and No. 6, or Canner, rounds.—No. 5, or Cutter, and No. 6, or Canner, rounds are not offered regularly to the retail trade. Some are boned for roasts. Most of them are used in sausage and in beef-ham sets for the dried and corned beef trade. The sets are known as "inside," "outside," and "knuckles." The relative proportion of these cuts to their combined weight is 42, 31, and 27 per cent, respectively. Some markets bone rounds of the Cutter grade for boneless steaks and roasts. The "top" or "inside" is used principally for steaks, while the bottom or "outside" is converted into roasts.



STEER LOINS

A, No. 1 or choice loin; B, No. 2 or good loin; C, No. 3 or medium loin; D, No. 4 or common loin

COW LOINS

A, No. 2 or good cow loin; B, No. 3 or medium cow loin; C, No. 4 or common cow loin

GRADES OF BEEF LOINS.

Under the Chicago method of cutting, the loin represents about 17 per cent of the weight of the side, but there are variations depending on the type and grade of the carcass. It contains the choicest, most valuable, and most preferred retail cuts of the entire carcass. Preference for loin cuts is due to their relative tenderness and quality. The groups of muscles in the loin and in the rib are relatively thick. They are the least used in the movements of the animal, and are well protected by bone and fat. The tenderloin or fillet is a part of this cut.

The loin is subdivided into the "loin end," which is the thick portion next the rump, and the "short loin" or portion next to the ribs. The retail cuts derived from the loin end are sirloin steak and sirloin roasts. From the end of the short loin next to the loin end porterhouse or T-bone steaks are taken. These are sometimes called tenderloin steaks because they contain a part of the tenderloin. This tenderloin, however, is comparatively short, and when it runs out the remaining portion is cut into club or Delmonico steaks.

The grade of the loin corresponds with that of the side from which it is taken, and is determined by quality, conformation, and finish. Evidences of these characteristics are depth of flesh, amount and color of surrounding fat, marbling, and firmness and color of the flesh.

No. A 1, or Prime, beef loin.—No. A 1, or Prime, beef loins are derived from A 1, or Prime, steer and heifer carcasses. Naturally, supplies of this grade are small. A steer loin of this grade is well rounded, convex, or bulging from end to end, and is well covered with fat. A heifer loin is slightly less convex, but is well rounded. Loins of this grade are smooth, have excellent depth of flesh in proportion to length and weight, which gives them a relatively short, compact, and heavy appearance. The flesh is well marbled with deposits of flaky-white fat, is fine-grained, firm, tender, and of light or cherry-red color. The fat covering is abundant and evenly distributed over the outer surfaces, but does not average more than three-fourths inch in depth over the top of the loin. It is firm to the touch and of creamy or clear white color. The kidney fats are not excessively wasty, and are white, crumbly, and of best quality. Such loins are sold chiefly to high-class hotel and restaurant trade.

No. 1, or Choice, beef loins.—No. 1, or Choice, beef loins are derived from No. 1, or Choice, steer, heifer, and cow carcasses. In shape they do not differ materially from prime loins of the respective classes, being always smooth, well developed, and very compact. Such a loin may differ from a No. A 1, or Prime, loin in finish, which is apparent in the depth and amount of fat covering and in the amount of suet. Generally, the fat covering and suet are thicker and more wasty, but not excessively so. A Choice loin may have the superior conformation and finish of a prime loin, but may show deficiencies in quality which may be indicated by hardness of bone, coarseness of grain, or by a slightly darker color of flesh. Choice loins are far above the average, and are sold chiefly to hotels, restaurants, and retail meat dealers catering to a discriminating trade.

No. 2, or Good, beef loins.—No. 2, or Good, beef loins are from good grade steer, heifer, and cow carcasses. The sex characteristics

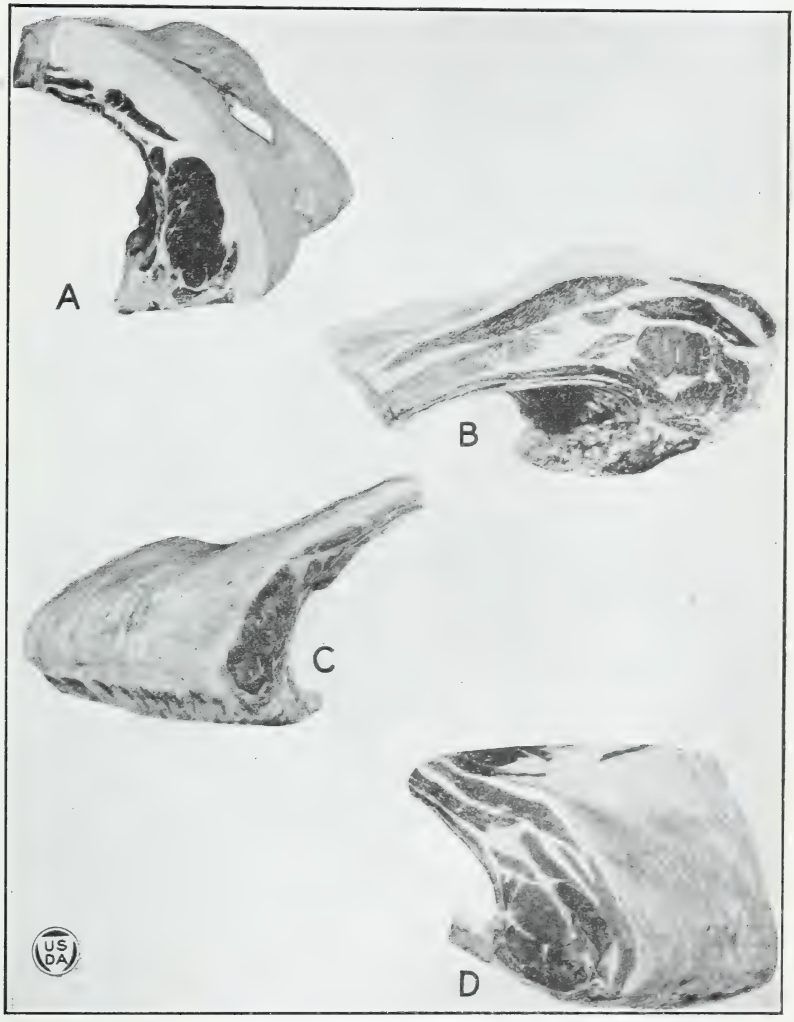
are more pronounced in this than in the higher grades. Good loins from all classes have depth of flesh above the average, but are deficient in this respect as compared with Choice and Prime loins. Good steer and heifer loins are moderately well rounded, but appear proportionately longer than Choice or Prime loins of the same classes. A Good cow loin is almost flat, but is fairly well fleshed. The heavy end appears unusually large when compared with the small or rib end. Loins of this grade are well covered with fat varying in thickness from one-half inch to slightly more than an inch. It often is rough, and may be slightly gobby. Cow loins of this grade are noted especially for their wasty fat covering. All Good loins have some marbling. This is the lowest grade in which marbling is found. The flesh is firm and of smooth grain, and varies in color from light to cherry-red. The color of the fat varies from a creamy to slightly yellowish color, but is of a quality which indicates that the finishing process included grain or other good ration. Loins of this grade are in evidence throughout the year in retail meat shops catering to a trade requiring meats above the average quality.

No. 3, or Medium, beef loins.—No. 3, or Medium, beef loins are from No. 3, or Medium, grade steer, heifer, and cow carcasses. They have only an average depth of flesh and fat, are angular, and lack the compactness of the better grades, and are relatively longer and flatter. Some steer and heifer loins of this grade have much of the convex appearance of the Good grade, but most of them are flat or slightly "dished" or concave in the "short loin." The broad ligament along the side of the backbone often is visible. All Medium cow loins are flat or concave and very angular. The fat covering of loins of this grade is thin and inclined to bunchiness, especially over the thick part of the loin and particularly in cow loins. The color of the external fat, the suet, and intermuscular fat is white or slightly yellowish and of average quality. The flesh generally is coarse-grained, watery, inclined to be tough, and has a slightly dark red color.

The muscles of a Medium grade loin, and those of the lower grades, often slip from their natural positions, even after having been thoroughly chilled. Flesh produced by grass alone rarely remains set in the cuts, even when chilled. Loins of this grade are on the market throughout the year.

No. 4, or Common, beef loins.—No. 4, or Common, beef loins are derived from No. 4, or Common, steer, heifer, and cow carcasses. They are flat, relatively long, very angular, rough, and have little or no covering or deposits of fat in the muscle seams or over the tenderloin. The limited amounts of fat which may be present are soft and have a yellowish tinge. There is a relatively greater proportion of bone to flesh and fat in this grade than in any of the higher grades. The broad ligament along the side of the backbone is plainly visible. The flesh is watery, tough, stringy, and dark red, and rarely remains set in its natural position. Loins of this grade are marketed throughout the year.

No. 5, or Cutter, beef loin.—No. 5, or Cutter, beef loins are chiefly from No. 5, or Cutter, cow carcasses, and a relatively small percentage is from No. 5, or Cutter, steer carcasses. They are very



STEER RIBS

A, No. A1 or prime ribs (loin end); B, No. A1 or prime ribs (chuck end); C, No. 1 or choice ribs (loin end); D, No. 1 or choice ribs (chuck end)

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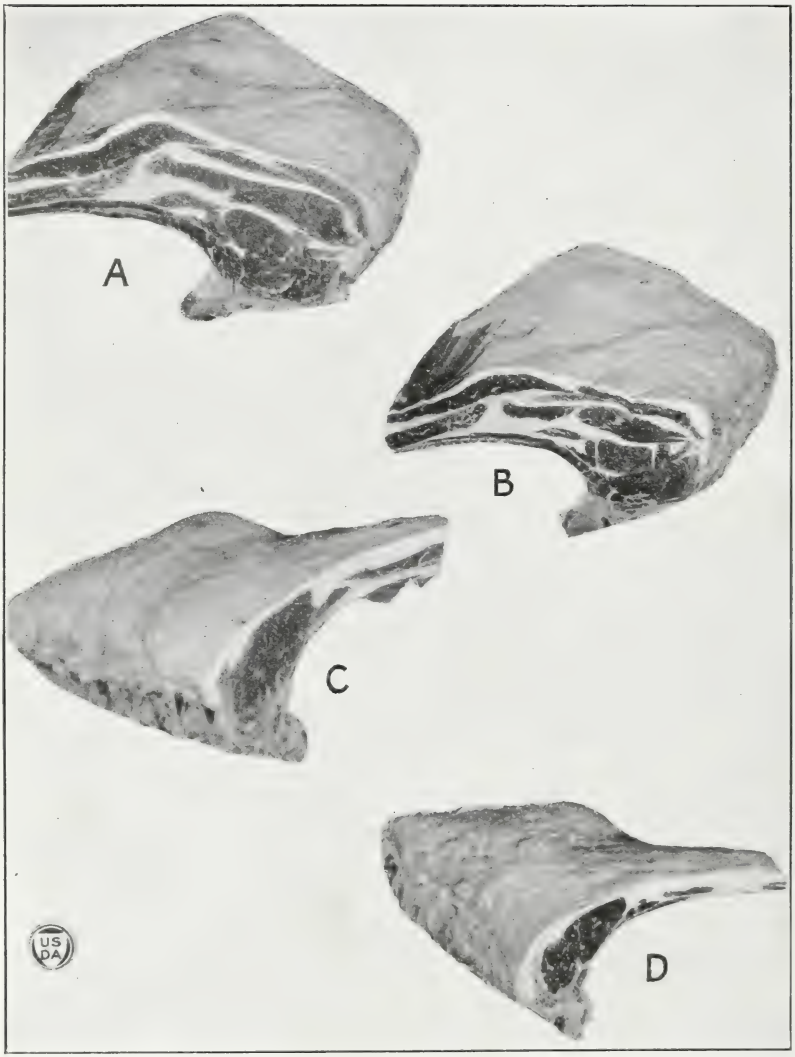
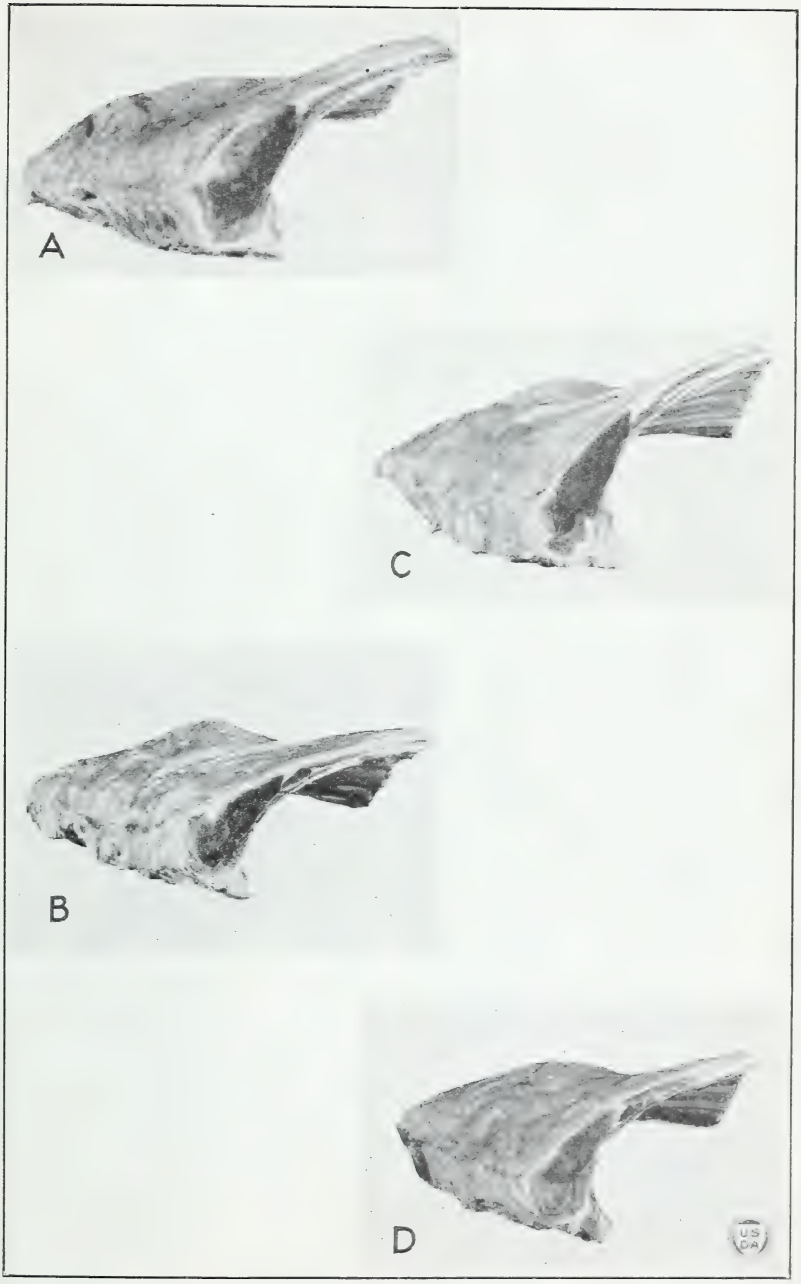


NO. 2 OR GOOD STEER AND COW RIBS

A, Steer ribs (chuck end); B, cow ribs (chuck end); C, steer ribs (loin end); D, cow ribs (loin end)



No. 3 or Medium and No. 4 or Common Beef Ribs

A, No. 3 or medium steer ribs (loin end); B, No. 3 or medium cow ribs (loin end); C, No. 4 or common steer ribs (loin end); D, No. 4 or common cow ribs (loin end)

NO. A1 OR PRIME STEER HINDS AND RIBS

thin, flat, or concave, long and angular, have little or no fat covering, and have scarcely any suet or intermuscular fat. The flesh is dark, coarse, stringy, tough, and watery. Very few steers, and practically no heifers, contribute to this grade. Such loins are sold to restaurants and dealers that cater to a trade requiring low-priced meats.

GRADES OF BEEF RIBS.

Beef ribs, under the Chicago method of cutting, contain seven ribs, and represent about 9 per cent of the carcass weight. In tenderness and value they are second only to loins. They are used principally for roasts, although many butchers convert them into steaks. Ribs and loins combined represent 26 per cent of the weight of the side, and the demand for them is usually out of proportion to that for other wholesale cuts.

The class and grade of beef ribs are the same as that of the carcass from which they are derived. It is difficult to determine the class of some ribs, and especially to differentiate between steer and heifer ribs. Cow ribs are more easily recognized. As a rule, cow ribs lack depth of flesh, and the rib bones show a wide arch and are comparatively thinly fleshed. Taken separately, the rib is graded by the depth, color, and marbling of the flesh, and the smoothness, depth, color, and quality of the fat covering. The amount of intermuscular fat and the quantity of fat on the inner walls and between the chine bones are also taken into account.

No. A 1, or Prime, beef ribs.—No. A 1, or Prime, beef ribs are very compact, and have unusual thickness or depth of flesh, which gives them a massive, bulging appearance. The flesh is firm, exceptionally fine-grained, and light or cherry-red in color. The unusual depth of flesh in this and all cuts of the Prime and Choice grades is due to good breeding and feeding, which are reflected in heavy deposits of fat between the muscles and generous marbling thoroughly interspersed among the muscle fibers. This condition is especially noticeable in ribs of the Prime and Choice grades. The fat covering is creamy or white in color, is very smooth, firm, and brittle. The inner walls are completely covered with a smooth, white, brittle fat. Fat deposits of high quality are between the spinal processes of the backbone. The "feather edge" of the blade bones is soft and pearly white, as are the tips of the chine bones. Since there are not many Prime beef carcasses, there can not be many Prime beef ribs.

No. 1, or Choice, beef ribs.—No. 1, or Choice, beef ribs do not differ radically from No. A 1, or Prime, ribs in shape, thickness, and color of the flesh. As a rule, the marbling or fat deposits are not so extensive, but are in good supply, indicating exceptional quality. The depth of the fat covering may be greater or less than in Prime ribs, and slightly rougher, but the quality is the same. The fat on the inner walls may be smooth, but generally lies in folds and ruffles which follow the rib alignment and always covers the bone and flesh. The out-cropping fat between the spinal process of the chine bones is always present, and the chine bones are spongy, red, and tipped with pearly-white cartilages. The "feather edge" of the blade bones is pearly white and soft, but may show some tendency to hardness.

No. 2, or Good, beef ribs.—No. 2, or Good, beef ribs have depth of flesh above the average, but usually are slightly deficient in this respect as compared with Choice ribs. This grade is the lowest that shows marbling. Fat deposits between the muscles are abundant. The fat covering generally is rough, and varies in thickness, but is of fair quality. The fat on the inner walls generally appears in ruffles, but the bones and intercostal muscles, especially near the backbones, are visible. The flesh is of a light to cherry-red color, fairly smooth-grained and moderately tender. The "feather edge" of the blade bone generally is white, but inclined to be hard or ossified.

No. 3, or Medium, beef ribs.—No. 3, or Medium, beef ribs have average depth of flesh. The exterior surface is thinly covered with fat and there is little or no fat either on the inner walls or between the muscles. There is no marbling, and scarcely any fat between the chine bones. Such ribs, however, have sufficient fat of fairly good quality to satisfy the demand of most consumers for roasts of average quality. There are streaks of fat on the inner walls between the ribs, but the rib bones are uncovered, hard, and grayish white. The flesh is dark, coarse-grained, and usually watery. The chine bones, including the tips, generally are grayish-white and flinty.

No. 4, or Common, beef ribs.—No. 4, or Common, beef ribs are below the average in thickness of flesh. They appear flat, and the rib bones, though moderately covered with flesh, are prominent. There is very little, if any, external fat covering, and no fat on the inner walls, but a sufficient amount between the muscles to make the roasts palatable. The flesh is thin, coarse, dark, watery and relatively tough. Thinness of flesh, prominence of the ribs, and lack of finish are the outstanding characteristics of Common ribs. The chine, rib, and blade bones generally are grayish white and flinty, except when the animal was under 3 years of age.

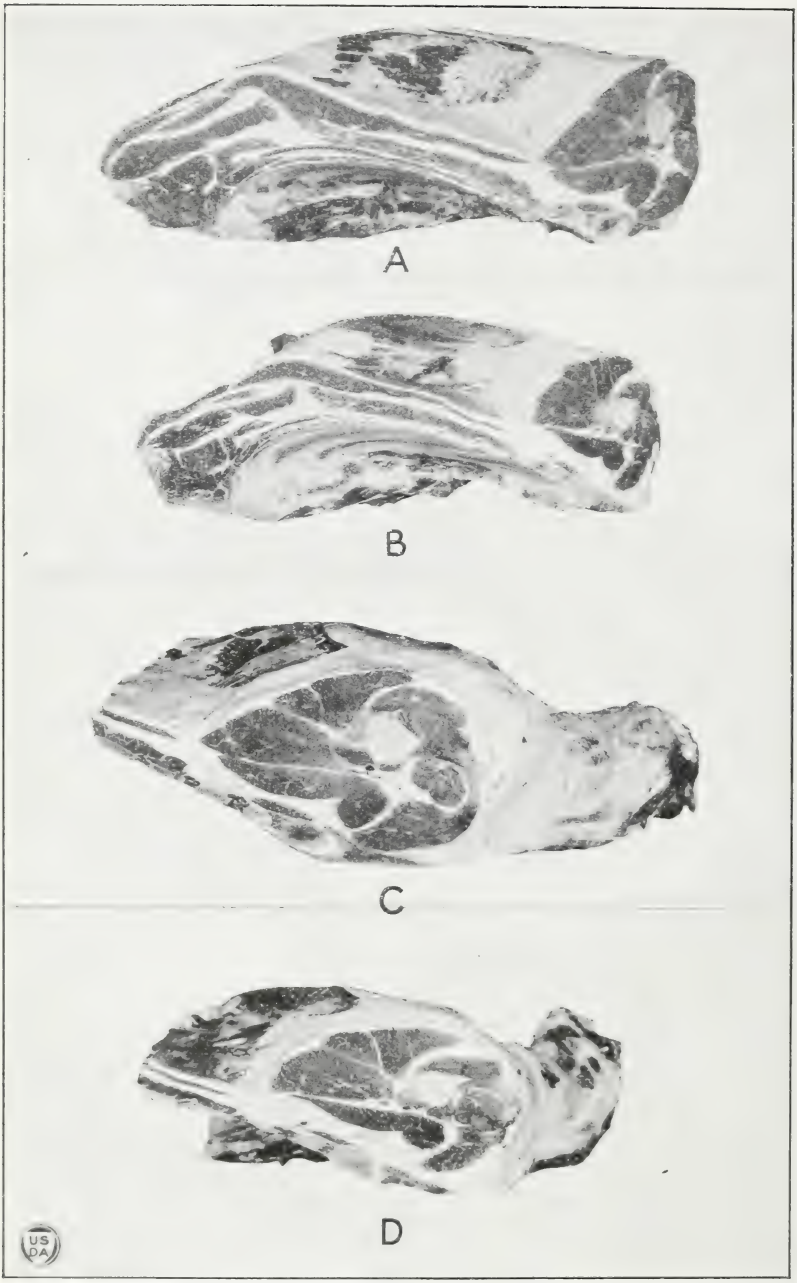
No. 5, or Cutter, beef ribs.—No. 5, or Cutter, beef ribs lack sufficient flesh and fat in proportion to bone to make them economical for the consumer. They are usually light, very thin, flat, and have no fat deposits between the muscles or on the interior surface. Only occasionally is there fat on the exterior surface. The bones are hard and flinty, and the flesh is coarse and tough, very watery, and dark. Ribs of this grade are offered intact in limited quantities only. They are usually boned and sold as boneless cuts, such as "regular" and "spencer" rolls.

GRADES OF BEEF CHUCKS.

Under the Chicago method of cutting, a beef chuck represents about 26 per cent of the weight of the side. It contains five ribs, with the shank and brisket removed. Some markets remove the shank by disjointing it at the shoulder. The "Manhattan" or "New York style" chuck includes the brisket and shank. In some markets this cut is known also as "cross cut." The chuck contains a large percentage of flesh of high nutritive value, but is widely discriminated against on account of the unattractive appearance of the retail cuts. It is regarded as one of the coarser cuts. It is especially

No. A1 or Prime and No. 1 or Choice Steer Chucks

A, No. A1 or prime steer chuck (rib end); B, No. 1 or choice steer chuck (rib end); C, No. A1 or prime steer chuck (shank end); D, No. 1 or choice steer chuck (shank end)



NO. 2 OR GOOD STEER AND COW CHUCKS

A, Good steer chuck (rib end); B, good cow chuck (rib end); C, good steer chuck (shank end); D, good cow chuck (shank end)

adapted to roasting, boiling, and stewing. Steaks are also cut from the rib end and from the shoulder clod.

The class and grade of the chuck are the same as those of the carcass from which it came. Cow chucks are distinguished from steer and heifer chucks by the long, tapering necks of the former and their uneven contour. Heifer chucks closely resemble steer chucks. Chucks from cows lack the depth and breadth, especially through and across the shoulders, that are peculiar to steer chucks of the same grade. The rib bones of cows are slightly wider, more "springy" or spready, and the surrounding flesh generally is much thinner than in steer chucks.

The principal factors which determine the grade of the chuck are quality, finish and conformation. Quality is determined largely by the color, texture, and grain of the flesh, and the quantity of fat deposits and covering. In general, the appearance of the cut surface at the rib end may be regarded as the principal index of quality. It also serves as a reliable index of the depth of flesh throughout the cut.

No. A 1, or Prime, beef chucks.—No. A 1, or Prime, beef chucks are thick, compact, and relatively short and plump. The depth of flesh, in proportion to the width from the backbone to the brisket, is especially noticeable. The heavy muscling, and abundant fat deposits give it a heavy, bulging, meaty appearance. The marbling and intermuscular fats are abundant, and relatively large quantities of high-grade fat occur between the spinal processes or chine bones. The flesh on the cut surface next to the rib is of an attractive light or medium red color, which gradually darkens from the shoulder toward the shank and neck, but not to a marked degree. The flesh is slightly coarser than that of the rib, but is firm and surprisingly tender and palatable. The inner walls are completely covered with smooth, white fat. The exterior surface also is completely covered, but the depth varies from three-fourths of an inch and less at the rib end to a thin layer over the neck and upper part of the shank. Pearly-white cartilages surround the outer edge of the blade, chine, and brisket bones, and these bones are red, spongy and easily chopped or sawed without splintering.

No. 1, or Choice, beef chucks.—No. 1, or Choice, beef chucks closely resemble Prime chucks in general conformation and quantity of flesh. There is a difference, however, in the finish and quality. As a rule, the fat covering is rougher, and not as evenly distributed over the shoulder and does not extend to the neck and shank. The inner walls are well covered with fat, which generally is more irregular in thickness than in Prime chucks, being thinner near the backbone. Folds or ruffles of fat follow the interior rib alignment, but the fat is of excellent quality, indicating a high degree of finish. The intermuscular fats, marbling, and the fats between the processes of the chine bones may be excessive, but usually are less than in the Prime Grade, and slightly inferior in quality. The flesh is of light to medium red, and of excellent quality. The cartilages on the blade, chine, and brisket bones are white and soft, and these bones are red, but often slightly harder than those in the Prime grade.

No. 2, or Good, beef chucks.—No. 2, or Good, beef chucks are above the average in depth of flesh and conformation, but are in-

ferior in these respects to choice and prime. They frequently have a comparatively flat appearance. The bulging appearance of the flesh along the back, noticeable in the better grades, is not in evidence in this grade. Good chucks taper slightly from the backbone toward the shoulder joints. There is usually a moderate amount of fat covering, which is somewhat rough and rarely extends beyond the shoulders from the rib end. There is also a moderate amount of intermuscular fat and a trace of marbling in the thicker parts.

The inner walls are partly covered with a rough fat of good quality, especially along the lower ends of the rib bones. Streaks of fat between the rib bones are visible. The flesh is firm, and varies from light to medium red. Generally, the cartilages on the blade, chine, and breast bones show varying degrees of hardness or ossification, according to age. Age also affects the tenderness of the meat to some extent.

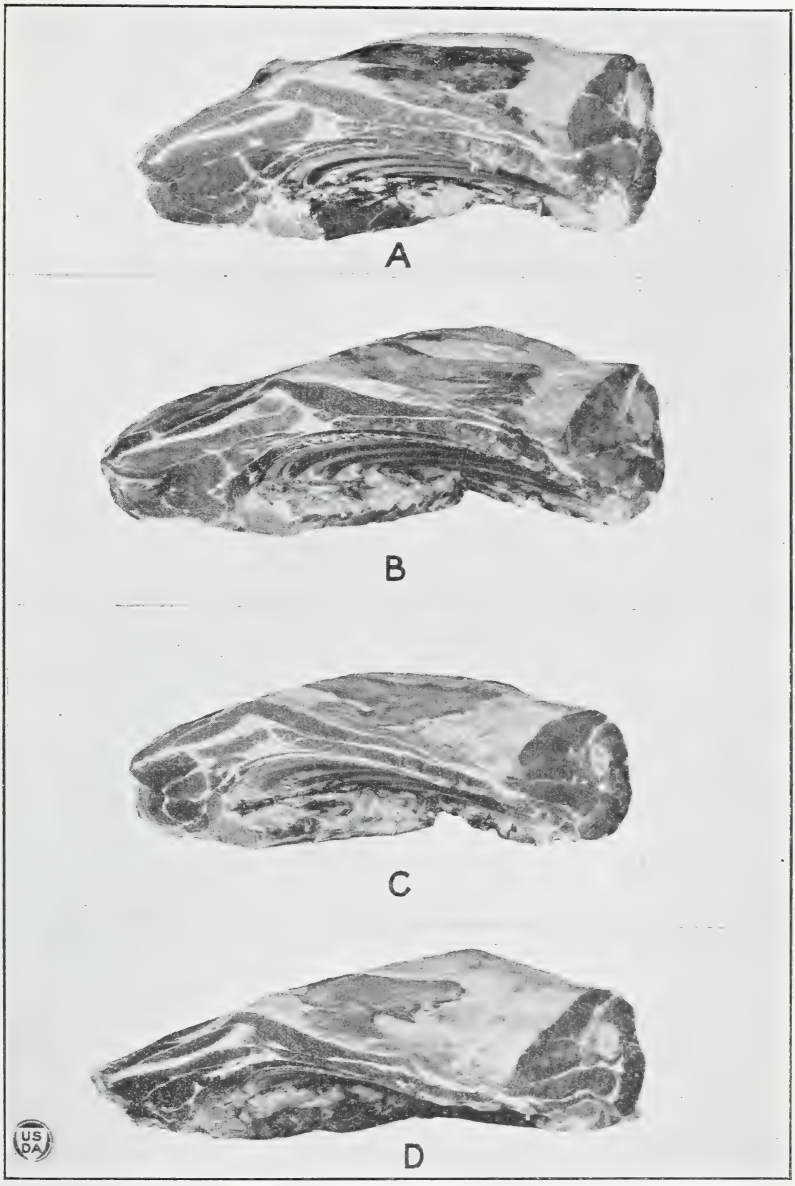
No. 3, or Medium, beef chucks.—No. 3, or Medium, beef chucks are more plentiful on the market than any other grade. They possess an average depth of flesh, and are rough and irregular in conformation. Such chucks appear wide and flat, and taper to a marked degree from the backbone toward the shoulder joint, but rarely show concavity between these points. They have scarcely any fat covering, except near the rib end. The intermuscular fats are scant, and there is no fat in the region of the chine bones. There is only a small amount of fat on the inner surface along the ribs, but it is more in evidence near the brisket. The tips of the chine, blade, and brisket bones generally are hard and the bones are white and flinty. The color of the flesh varies from light-red in young beef to dark-red in older beef. It is usually tough, watery, and inclined to slip from its natural position when cut from the carcass.

No. 4, or Common, beef chucks.—No. 4, or Common, beef chucks are thin, flat, rough, and irregular, and are usually light and unattractive in general appearance. The muscles along the back taper or dish sharply from the backbone, producing a concave effect. There is no fat covering on the interior or exterior surfaces, and scarcely any intermuscular fat. The bones are white and flinty, and the flesh has a dark-red color, is watery, and very tough. The muscles slip readily from their natural positions, often exposing the blade bone. The flesh generally is very moist, and shrinks greatly when cooked.

No. 5, or Cutter; and No. 6, or Canner, beef chucks.—Chucks of these grades are boned and used chiefly for canning, sausage, and curing purposes. Some, however, are boned and sold fresh or frozen. Boneless chucks are sold mostly to restaurant and hotel-supply houses. They rarely are handled fresh by the retail trade.

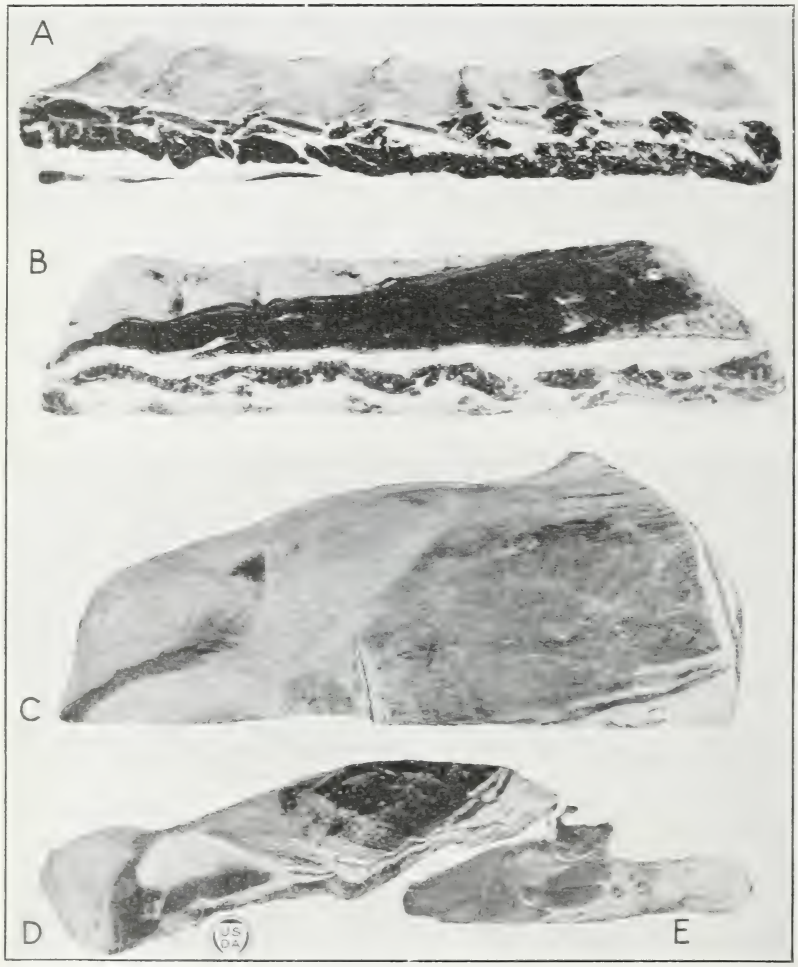
GRADES OF PLATES AND BRISKETS.

The grades of beef plates and briskets correspond to those of the carcass from which they come. Together, the two cuts represent aproximately 12 per cent of the weight of the side. Taken separately, the plate represents 8 per cent and the brisket 4 per cent, all based on the Chicago method of cutting. The plate is referred to as



No. 3 or Medium and No. 4 or Common Steer and Cow Chucks

A, No. 3 or medium steer chuck; B, No. 3 or medium cow chuck; C, No. 4 or common steer chuck; D, No. 4 or common cow chuck



ROUGH CUTS OF BEEF

A, Short ribs of beef (inside view); B, short ribs of beef (outside view); D, plate and brisket (outside view); E, fore shank

"navel" in the Chicago market. In high-grade carcasses the percentage of fat in these cuts is much greater than in any of the other wholesale cuts and their market value is largely determined by the amount of fat. In most markets the demand for fresh plates and briskets is equal to only a fraction of the fresh supply, and these cuts are marketed largely as corned or barreled beef. In Boston, the trade specializes in rolled, boneless cuts, and that market uses the larger percentage of its supply of fresh plates and briskets in this manner. Plates and briskets make excellent retail cuts for boiling and stewing, but are not suitable for roasts, unless boned and rolled. Short ribs of beef are the rib end of the plate cut 4 to 6 inches wide the entire length of the plate, or the width of seven ribs.

Plates from cows are broader and have proportionately less depth of flesh than plates from steer and heifer carcasses.

The brisket is considered more desirable than the plate, and is always in demand by hotel, restaurant, and lunch-room trade, and is used principally as corned beef.

No. A 1, or Prime, beef plates and briskets.—No. A 1, or Prime, beef plates and briskets are from Prime beef carcasses, and the market supply is almost negligible. They are thick and well-fleshed, and have an abundance of creamy-white fat interspersed between the layers of lean meat. The exterior surfaces are well and evenly covered with fat of excellent quality. The flesh is light to medium red, and has moderately fine grain as compared with other wholesale cuts of this grade.

No. 1, or Choice, beef plates and briskets.—Plates and briskets of this grade differ only slightly in thickness, quality, and finish from those of No. A 1, or Prime, grade. They may have more or less fat, but as a rule it is not so evenly distributed. The flesh has a light to medium-red color, and is comparatively fine-grained and firm. Plates and briskets of this grade are generally marketed fresh, and are rarely corned or sold as barreled beef.

No. 2, or Good, beef plates and briskets.—Plates and briskets of this grade have more than the average depth of flesh, and have generous quantities of fat interspersed between the layers of lean flesh and deposited along the ribs. The color of the flesh is medium to slightly dark red, and is inclined to coarseness. The outer surface of the plate is fairly evenly covered with a thin coating of creamy-white fat, which diminishes toward the brisket. Inside, semiloose fats are in evidence, and these are white and brittle. Plates and briskets of this grade are sold fresh, principally.

No. 3, or Medium, beef plates and briskets.—No. 3, or Medium, beef plates and briskets are available throughout the year. They have average depth of flesh, and make desirable retail cuts for stewing and boiling. There is practically no outside covering of fat, except a thin layer on the upper end of the plate next to the flank. There is no outside fat on the brisket, and only limited amounts attached to the inside or breast bone. The percentage of bone is relatively high. The flesh is usually dark, stringy, and very tough. It also has a moist or watery appearance, and shrinks heavily when cooked. A large percentage of this grade is corned and sold as barreled beef.

No. 4, or Common, beef plates and briskets.—Plates and briskets of this grade represent the lowest grade that is taken by the fresh

beef trade in any appreciable quantity. They are thin and relatively broad. All rib bones are prominent, and usually hard and flinty. There is a total lack of both outside and inside fat. The flesh is uniformly coarse, dark, and tough. The proportion of bone is unusually high. A small percentage of plates and briskets of this grade is boned and rolled, and sold fresh, but the bulk is corned and sold as barreled beef.

No. 5, or Cutter, and No. 6, or Canner, beef plates and briskets.—Plates and briskets of these grades are seldom sold as fresh beef. The total lack of fat and the low percentage of flesh generally make them uneconomical as fresh beef. The flesh is very unattractive. It is exceptionally dark, very coarse, and generally tough. Practically all plates and briskets of these grades are boned for sausage at the packing plants, and a relatively small percentage is corned and sold as low-grade barreled beef.

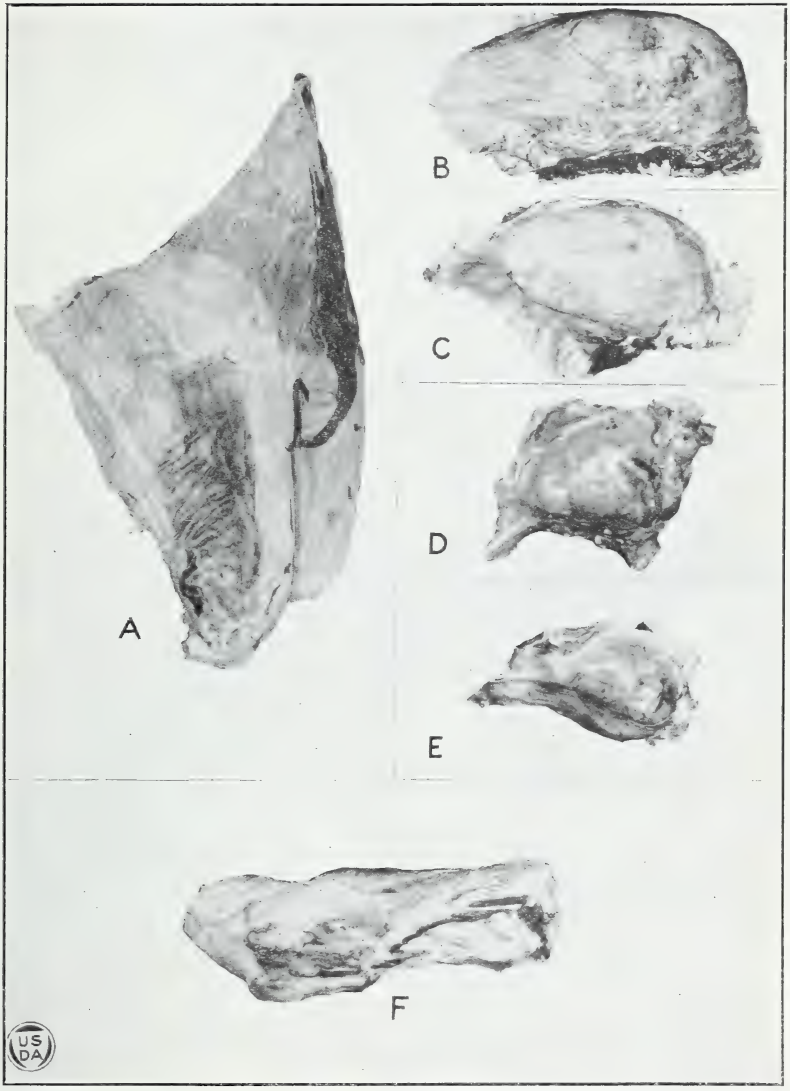
Beef flanks.—The flank is a boneless cut taken from the hindquarter just below the loin and in front of the round. Under the Chicago method of cutting, it represents about 3½ per cent of the weight of the side. Flanks are rarely sold separately, and for that reason separate descriptions of the various grades have been deemed unnecessary. Many are sold with the loin or round, according to trade customs at the different markets. When so sold, they fall into the same class and grade as the main cut to which they are attached. Naturally there are variations in the quantity and quality of both the flesh and fat, according to the grade.

Flanks from No. 1, or Choice, and No. 2, or Good, carcasses are thick and well covered with fat of excellent quality. Except for the flank steak, which represents about 17 per cent of the flank, and a small quantity of lean trimmings, the cut is composed almost entirely of fat, which decreases in quantity with each grade downward. The flank steak, which is almost entirely lean meat, has a light or medium red color, but is rather coarse-grained and often tough. When properly prepared, it makes a desirable steak or roast.

Flanks from low-grade carcasses have only a scant covering of fat, this usually showing a yellowish tinge. The steaks are thin, dark, coarse-grained, and tough.

Beef shanks.—Except when otherwise specified, the term "shank" refers to the cut from the forequarter. Hindshanks usually are sold as a part of the round and seldom, if ever, are offered separately. Foreshanks represent 4 per cent of the carcass when cut according to the Chicago method. Shanks from Good, Choice, and Prime carcasses have a thin covering of white fat next to the shoulder, which diminishes sharply toward the knee. All lower grades have no fat covering. The flesh is usually coarse, and the color varies according to the grade of the carcass. In the same carcass, however, it is darker than in the better cuts, such as rib and loin. The flesh from shanks is used principally for stews and hamburger steak; also to some extent as soup stock. The bone is used extensively for soup stock.

Beef kidney knobs.—The kidney knob is attached to the inner surface of the loin, covering the tenderloin or "fillet," and includes the kidney and the suet or fat surrounding it. It is generally sold with the hindquarter or untrimmed loin. Kidney knobs are not sold as such to the retail trade, the kidneys being removed and sold



BEEF FLANK, SHANK, AND KIDNEY KNOBS

A, beef flank; B, C, D, E, kidney knobs; F, hind shank

separately. No grades are recognized. The size varies generally according to the grade of the carcass from which they are taken. Heavy, fat carcasses produce large kidney knobs, and light or thin carcasses small ones. Fat cows as a rule have larger kidney knobs than other classes.

Beef suet.—Suet is the semiloose fat obtained from beef carcasses. It is composed chiefly of kidney, crotch, and breast fats, and represents about 3 per cent of the carcass weight. The greatest amount comes from the hindquarters. The percentage varies according to the grade of the carcass, being greater, as a rule, in the better grades, gradually diminishing with each succeeding lower grade. Common, canner, and cutter carcasses have practically no suet. Suet is sold in only limited quantities to the retail trade, as it is used principally by renderers in the manufacture of oleo oil. Small quantities are used in preparing mince meat.

KOSHER BEEF.

Beef from cattle slaughtered and dressed in accordance with certain prescribed Jewish rites is known as "kosher beef." The term "kosher" means clean, or ceremonially clean. The method of slaughter differs from the usual custom in that the animal is not stunned before the throat is cut. The vital organs receive a special inspection, and the carcass is cleaned under the supervision of a Rabbi of the Jewish church, or his representative, who places a mark on the forequarter for purposes of identification.

In the United States, only the forequarters, often with the rib cuts removed, are used by orthodox Jews. These must be used within three days after slaughter. If not used within that time, the meat must be washed every third day thereafter until the twelfth day, after which it is no longer considered kosher, but is referred to as "tref," and may not be used. Most "kosher" markets sell only the square cut chucks (chuck, plate, brisket, and shin). Boston is probably the only exception. In that market the entire forequarter, which includes 10 ribs, is used by the "kosher" trade. Such trade is confined principally to the larger cities that have considerable Jewish population.

TABLE 4.—*Proportion of classes to total beef, in per cent, average by months, July 1, 1918, to December 31, 1920, based on numbers of carcasses.*

Months.	Steer beef.	Bull and stag beef.	Cow beef.	Heifer beef.
January	38.91	2.96	42.63	15.50
February	44.36	3.23	34.90	17.45
March	51.62	3.19	28.95	16.24
April	55.76	2.95	20.33	20.96
May	61.77	3.64	19.63	14.96
June	59.49	3.50	21.97	15.04
July	50.74	4.78	31.04	13.44
August	48.03	3.38	35.29	13.33
September	43.75	3.53	34.58	18.11
October	38.61	3.34	43.95	14.10
November	36.24	3.35	47.02	13.39
December	38.19	2.72	44.22	14.87
Average for 30 months	44.94	3.57	36.53	14.96

Males, 48.51; females, 51.49.

PROPORTIONS OF THE VARIOUS CLASSES OF BEEF.

Table 4 shows the percentage of all beef represented by each class for each month of the year, based on the number of carcasses produced during a 30-month period. In this tabulation bull beef and stag beef are considered as a single group.

The percentages were computed from data submitted by slaughterers in the United States to the United States Food Administration, weekly during the war, and supplied monthly thereafter to the Bureau of Markets, now the Bureau of Agricultural Economics, United States Department of Agriculture.

From the data submitted, it appears that 48.51 per cent of the total number of cattle slaughtered were males, and 51.49 per cent were females. There is no doubt that the relation is reversed when considered from a tonnage standpoint.

Table 5 shows the percentage relation by classes, by years, and the average for 30 months, for all cattle slaughtered, except canners and cutters.

Table 6 carries the same information, with canners and cutters included.

TABLE 5.—*Percentage distribution of classes in total beef (excluding canners and cutters) based on numbers of carcasses.*

Class.	1920	1919	1918, 6 months only.	Average for 30 months.
	Per cent.	*Per cent.*	*Per cent.*	*Per cent.*
Steers, all grades	54.95	49.91	54.75	53.20
Bulls..."..."	2.83	2.94	4.56	3.44
Cows..."..."	24.52	28.81	25.98	26.44
Heifers."..."	17.70	18.34	14.71	16.92

TABLE 6.—*Percentage distribution of classes in total beef (including canners and cutters) based on numbers of carcasses.*

	Per cent.	*Per cent.*	*Per cent.*	*Per cent.*
Steers	49.59	43.44	41.80	44.94
Bulls	3.20	3.11	4.40	3.57
Cows	31.23	37.77	40.58	36.53
Heifers	15.98	15.68	13.22	14.96

APPROXIMATE DISTRIBUTION OF STEER BEEF BY GRADES.

A careful study of available data indicates that scarcely more than 26 per cent of all steer beef on the markets ranks above the Medium grade. About 0.5 per cent falls in the Prime grade, 4 per cent in the Choice grade, 22 per cent in the Good grade, 53 per cent in the Medium grade, 17 per cent in the Common grade, and 3.5 per cent in the Cutter and Canner grades.

Market classes and grades of dressed beef.

	Class.	Grade.
Carcass beef	Steers	No. A 1 or Prime. No. 1 or Choice. No. 2 or Good. No. 3 or Medium. No. 4 or Common. No. 5 or Cutter. No. 6 or Canner
	Heifers	No. A 1 or Prime. No. 1 or Choice. No. 2 or Good. No. 3 or Medium. No. 4 or Common. No. 5 or Cutter. No. 6 or Canner.
	Cows	No. 1 or Choice. No. 2 or Good. No. 3 or Medium. No. 4 or Common. No. 5 or Cutter. No. 6 or Canner.
Carcass beef	Bulls	No. 1 or Choice. No. 2 or Good. No. 3 or Medium. No. 4 or Common. No. 5 or Cutter. No. 6 or Canner.
	Stags	No. 1 or Choice. No. 2 or Good. No. 3 or Medium. No. 4 or Common. No. 5 or Cutter. No. 6 or Canner.

Wholesale cuts and grades of dressed beef.

Cuts.	Grades.
Round and Rump	No. A 1 or Prime. No. 1 or Choice. No. 2 or Good. No. 3 or Medium. No. 4 or Common. No. 5 or Cutter.
Loin	No. A 1 or Prime. No. 1 or Choice. No. 2 or Good. No. 3 or Medium. No. 4 or Common. No. 5 or Cutter.
Rib	No. A 1 or Prime. No. 1 or Choice. No. 2 or Good. No. 3 or Medium. No. 4 or Common. No. 5 or Cutter.
Chuck	No. A 1 or Prime. No. 1 or Choice. No. 2 or Good. No. 3 or Medium. No. 4 or Common. No. 5 or Cutter.
Plate	No. A 1 or Prime. No. 1 or Choice. No. 2 or Good. No. 3 or Medium. No. 4 or Common. No. 5 or Cutter.
Brisket	No. A 1 or Prime. No. 1 or Choice. No. 2 or Good. No. 3 or Medium. No. 4 or Common. No. 5 or Cutter.
Flank	No. A 1 or Prime. No. 1 or Choice. No. 2 or Good. No. 3 or Medium. No. 4 or Common. No. 5 or Cutter.
Shank	Not Graded.
Suet	Not Graded.

ORGANIZATION OF THE UNITED STATES DEPARTMENT OF AGRICULTURE.

January 26, 1924.

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